CITY OF REDLANDS
CITY COUNCIL

A G E N D A S

MARCH 5, 2024

EDDIE TEJEDA
Mayor

PAUL T. BARICH
Mayor Pro Tempore

DENISE DAVIS
Council Member

JENNA GUZMAN-LOWERY
Council Member

MARIO SAUCEDO
Council Member

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JEANNE DONALDSON
City Clerk

PHILLIP DOOLITTLE
City Treasurer

CHARLES M. DUGGAN JR.
City Manager

YVETTE M. ABICH GARCIA
City Attorney

5:00 p.m. Open Public Meeting, Public Comment (Closed Session)
6:00 p.m. Open Session (Public Meeting)
* * *
City Council Chambers
Civic Center, 35 Cajon Street, Redlands, California

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A G E N D A

The following information comprises the agenda for the regular meetings of the City Council of the City of Redlands and the Board of Directors of the Successor Agency of the former Redevelopment Agency of the City of Redlands at the times noted below in the City Council Chambers, Civic Center, 35 Cajon Street, Redlands, California, on:

TUESDAY, MARCH 5, 2024

To join via Zoom on a computer, laptop, or smart device
Please visit www.zoom.us, click on Join a Meeting
Enter the **Meeting ID 824 4618 0187**, then run the Zoom launcher
To join via Zoom with audio only (cell phone or landline):
Dial **1-877-853-5247**
Enter the **Meeting ID 824 4618 0187**

Should the City lose connectivity on Zoom, we will halt the meeting until it can be restored. To check on the status of remote connectivity in the event of an outage, go to the City's website at www.cityofredlands.org or to the City's Facebook page at @CityofRedlands or the Instagram page at @CityofRedlands_CityHall.

In the event the City cannot reestablish Zoom connectivity in a reasonable amount of time, the mayor will adjourn the meeting to a future date.

***PLEASE NOTE**:* Anyone desiring to speak on an agendized item at this meeting may do so during the consideration of that item. Due to time constraints and the number of persons who may wish to give oral testimony, public comments will be limited to three (3) minutes.

- **To provide comment while participating from Council Chambers:**
  - Although it is not required, speakers are encouraged to submit a "Speaker Sign Up Sheet" before the meeting is convened. Forms are available in the Office of the City Clerk or in Council Chambers.
  - After the meeting has convened, you may place the speaker form in the basket at the table along the north wall of the Chambers. Please do not disturb the City Clerk while the meeting is in progress.
- **To provide comment through Zoom (on a computer, laptop, or smart device)**:
  - Click the "Raise Hand" button and the moderator will unmute you when it is your turn to speak
- **To provide comment via audio only (cell phone or landline)**:
  - Dial *9 to "Raise Hand". The moderator will identify you by your area code and last 3 numbers of your telephone number when it is your turn to speak.



PLEASE SILENCE CELL PHONES, PAGERS AND OTHER ELECTRONIC COMMUNICATION DEVICES UPON ENTERING THE CHAMBERS

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5:00 P.M.

A. **Call City Council Meeting to Order.**

B. **Public Comment**
(Any person wishing to provide public comment on a closed session matter may do so at this time.)

C. **Recess until 6:00 P.M. Open Session.**
There are no Closed Session matters.)

6:00 P.M.

E. **Reconvene City Council Meeting**

F. ***Invocation by Council Member Davis***
Pledge of Allegiance by RUSD eAcademy, ASB students
(In keeping with long-standing traditions of legislative invocations, this City Council meeting may include a brief invocation. Such invocations are not intended to proselytize or advance any one, or to disparage any other, faith or belief. Neither the City nor the City Council endorses any particular religious belief or form of invocation.)

G. **Presentations**

1. Redlands Pet Adoption (Redlands Animal Services)

H. **Public Comment - City Council**
(At this time, the City Council will provide an opportunity for the public to address them on any subject, within the jurisdiction of the City Council, which is not already scheduled on this agenda. However, any matter that requires action will be referred to staff for a report and possible action at a subsequent meeting. Comments will be limited to three {3} minutes.)

I. **Consent Calendar**
(The following routine items have been recommended for approval and will be acted upon simultaneously unless separate discussion and/or action is requested by a Councilmember or a member of the audience.)

1. Approve the regular meeting minutes of February 20, 2024 and the special meeting minutes of February 21, 2024 (City Clerk Donaldson)

2. Approve recommendation for appointment to the Human Relations Commission (Council Member Saucedo)

3. Adopt Resolution No. 8558 Delegating Investment Authority to the City Treasurer Pursuant to Government Code Section 53607 (Management Services/Finance Director Garcia)

4. Approve the Memorandum of Understanding between the City of Redlands and the City of Victorville for the loan of a Fire Tiller Truck to Victorville Fire Department (Fire Chief Sessler)

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5. Approve the Memorandum of Understanding with the San Bernardino County Department of Public Health Environmental Health Services to provide Edible Food Recovery Inspection and Enforcement per Senate Bill1383 (Facilities and Community Services Director Crocker)

6. Approve the request for commercial vendors and the temporary closure of a portion of 5th Street for the Stronger Together Now Giving Sunday event within Ed Hales Park on Sunday, March 31, 2024; approve a request for in-kind support in the amount of $1,969, and determine that the event is categorically exempt from environmental review pursuant to Section 15311 of the State's guidelines implementing the California Environmental Quality Act (Facilities and Community Services Director Crocker)

7. Approve a request for in-kind support in the amount of $112,769.88 related to the Redlands Bicycle Classic event hosted by the Redlands Bicycle Classic Inc. to be held on April 12, 2024, through April 14, 2024; authorize temporary street closures related to the event; authorize the sale and consumption of alcoholic beverages at the event; and determine that the sale and consumption of alcoholic beverages at the event is categorically exempt from environmental review pursuant to Section 15061 (b)(3) of the State's guidelines implementing the California Environmental Quality Act (Facilities and Community Services Director Crocker)

J. **Communications**

1. Annual Report of the Cultural Arts Commission presented by Chair Daniel Gohman (Facilities and Community Services Director Crocker)

2. Annual Report of the Municipal Utilities/Public Works Commission presented by Commissioner Adekunle Ojo (Municipal Utilities and Engineering Director Harris)

3. Discussion and possible action relating to the Mid-Year General Fund Budget Review for Fiscal Year 2023-24 (Management Services/Finance Director Garcia)

4. Discussion and possible action regarding a potential ordinance to ban the use of gas-powered leaf blowers within the City of Redlands (Facilities and Community Services Director Crocker)

5. Discussion and possible action concerning a loan to Redlands Historical Museum Association for the construction of the Museum of Redlands (City Manager Duggan)

K. **Public Hearings**

1. Public Hearing to consider the following applications for the Lugonia Village residential project located at the northwest corner of West Lugonia Avenue and Karon Street (APNs 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000) within the Specific Development (EV/SD) District of the East Valley Corridor Specific Plan, by applicant Redlands Summit, LLC.
(Mayor to declare meeting open as a public hearing)

   A. **Reso No. 8551 - Mitigated Negative Declaration and Socio-Economic Cost/Benefit Study** prepared for the project in accordance with Section 15074 of the California Environmental Quality Act and Measure "U."
   B. **Reso No. 8552 - General Plan Amendment No. 143** - A request to amend the General Plan land use designation of approximately 17.9 acres from Commercial to High Density Residential (up to 27 dwelling units per acre), and amend the land use designation of approximately one acre from Parks/Golf Course to High Density Residential (up to 27 dwelling units per acre).
   C. **Reso No. 8553 - Specific Plan Amendment No. 40 Amendment No. 48** - A request to amend the East Valley Corridor Specific Plan (Specific Plan No. 40) to remove 24.4 acres from the boundaries of East Valley Corridor Specific Plan area.

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D. **Ordinance No. 2960 (Zone Change No. 469)** - A request to change the zoning designation of the 24.4 gross acre project site to 18.89 gross acres of High Density Residential (R-3) District and 5.51 gross acres to Single Family Residential (R-1) District for development purposes.

E. **Reso. No. 8554 - Tentative Parcel Map No. 20469** - A request to subdivide the entire project site into three parcels (3.38 net acres, 4.75 net acres, and 14.48 net acres in size) for development purposes and further subdivision with tentative tract maps; and approval of **Commission Review and Approval No. 941** to construct a 451-unit multifamily apartment complex fronting along Lugonia Avenue, including parking, landscaping, open space, recreation areas, and related onsite and frontage improvements.

F. **Reso. No. 8555 - Tentative Tract Map No. 20490** - A request to subdivide 3.47 net acres into 20 lots, ranging in size from 5,995 to 10,518 sq. ft., with 18 numbered lots for single-family residential development, one lettered lot utilized as a private park, and one lettered lot for stormwater facilities; and approval of **Commission Review and Approval No. 940** to construct a total of 18 single family homes fronting Karon Street and related onsite and frontage improvements.

G. **Reso. No. 8556 - Tentative Tract Map No. 20491** - A request to subdivide Parcel 1 of Tentative Parcel Map No. 20469 map for condominium purposes, to be utilized for the development of 72 residential townhomes (condominium airspace units plus common lots); and approval of **Commission Review and Approval No. 942** to construct a 72-unit townhouse development fronting along a proposed extension of Pennsylvania Avenue, includes parking, landscaping, open space, recreation areas, and related onsite and frontage improvements.

H. **Reso. No. 8557** - A Density Bonus and Inclusionary Housing Agreement requested for the project, pursuant to California Government Code section 65915 et seq. and in accordance with Redlands Municipal Chapter 18.230 (Inclusionary Housing).
(Development Services Director Desatnik)

L. **New Business**

1. Consideration of Resolution No. 8550, a requirement of the San Bernardino County Transportation Authority, Transportation Development Act Article 3 Guidelines for acceptance of the $1,282,000 Bicycle and Pedestrian Facilities Program grant; the 15% local match from Public Benefit Trails Reserve funds; the additional appropriation of $1,089,700; and determination that these actions are exempt from environmental review pursuant to Sections 15061(b)(3) and 15301(c) of the State's Guidelines implementing the California Environmental Quality Act (Municipal Utilities and Engineering Director Harris)

2. Consideration of Resolution No. 8560 accepting the dedication of 1.66 acres of parkland from MLC Holdings, Inc., the future reimbursement of $463,312.98 in Park and Open Space Development Impact Fees associated with Tentative Tract Map 20528, and determine that the project is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Facilities and Community Services Director Crocker)

M. **Individual Council Member Announcements and/or Reports on Activities**
(No collective discussion or action.)

N. **Adjournment**
The next regular meeting of the City Council will be held on March 19, 2024.

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If you challenge any proposed development entitlement listed on this agenda in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Council at or prior to this public hearing.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Goutam Dobey, of the Municipal Utilities and Engineering Department at (909) 798-7584 ext 2. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

(28 CFR 35.102-35.104 ADA Title II)

Any writings or documents distributed to a majority of the City Council regarding an open session agenda item less than 72 hours before this meeting are available for public inspection at the City Clerk's Office or at the dais of the City Clerk once the open session begins.

Staff reports or other written documentation relating to items referred to on the agenda are available at the A. K. Smiley Public Library, 125 West Vine Street, Redlands, California, and on the City's website referenced below.

Regular meetings are televised live on Redlands TV Channel 3 (Spectrum) and Channel 35 (Frontier) and re-broadcast at 7:00 P.M. the following Wednesday, Friday and Sunday; and at 9:00 A.M. Thursday, Saturday and Monday. Meetings are also streamed live and archived for later viewing on demand on the City's website at www.cityofredlands.org. Agendas, staff reports and minutes of the City Council of the City of Redlands are available online at: www.cityofredlands.org.

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City Council/Successor Agency Meeting **I. 1.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Approve the regular meeting minutes of February 20, 2024 and the special meeting minutes of February 21, 2024 (City Clerk Donaldson)

MOTION:

I move to approve the regular meeting minutes of February 20, 2024, and the special meeting minutes of February 21, 2024.

Attachments

Regular meeting minutes of February 20, 2024

Special meeting minutes of February 21, 2024

MINUTES

Regular meeting of the City Council of the City of Redlands held in the Council Chambers, Civic Center, 35 Cajon Street, on February 20, 2024 at 5:00 P.M.

Present: Eddie Tejeda, Mayor
Paul Barich, Mayor Pro Tempore
Denise Davis, Council Member
Jenna Guzman-Lowery, Council Member
Mario Saucedo, Council Member

Staff: Charles M. Duggan, Jr., City Manager; Yvette M. Abich Garcia, City Attorney; Jeanne Donaldson, City Clerk; Phillip Doolittle, City Treasurer; Janice McConnell, Assistant City Manager; Chris Boatman, Assistant City Manager; Carl Baker, Public Information Officer; Danielle Garcia, Management Services/Finance Director; Brian Desatnik, Development Services Director; John Harris, Municipal Utilities and Engineering Director; Rich Sessler, Fire Chief; Rachel Tolber, Police Chief; Tabitha Crocker, Facilities and Community Services Director; Robert Meteau, Jr., HR/Risk Management Director

Mayor Tejeda called the meeting to order and explained that comments could be presented in-person, via Zoom, via cell phone or landline. He offered the public an opportunity to provide comment on any item on the agenda for the closed session.

PUBLIC COMMENT

None forthcoming

CLOSED SESSION

Conference with legal counsel: Existing Litigation - Government Code §54956.9(d)(1) (City Attorney Garcia)
Two Cases:

1. Salcido v. City of Redlands, et al., San Bernardino Superior Court, Case No. CIVSB2218452

2. Holzer v. City of Redlands, San Bernardino Superior Court, Case No. CIVSB2322787

RECONVENE CITY COUNCIL MEETING

The meeting reconvened at 6:00 P.M. with an invocation by Council Member Saucedo followed by the pledge of allegiance to the American flag.

CLOSED SESSION REPORT

City Attorney Garcia announced that no reportable action was taken during the closed session.

PUBLIC COMMENT

Traffic Congestion - Susan Leonard complained about the City's increase in traffic congestion, which she claimed has become tortuous and has caused the quality of life to be downgraded. She reminded everyone that the voters clearly denied Measure G and yet, she said Council continues to ignore the will of the people.

Consideration of Allowing Cannabis Dispensaries - Dennis Bell thought allowing dispensaries in Redlands would be a bad idea, one that would likely cause staff nightmares with implementation and enforcement. Joshua Hall was glad the item was pulled from the agenda, and he said there was no need for dispensaries in town. Dan Jimenez thanked staff for a very thorough report, adding that he was convinced there were more drawbacks than benefits to allowing dispensaries within the community.

CONSENT CALENDAR

Minutes

On motion of Mayor Pro Tempore Paul Barich, seconded by Council Member Denise Davis, the City Council unanimously approved, by roll call vote, the regular meeting minutes of February 6, 2024, and the special meeting minutes of January 31, 2024.

Vote: 5 - 0 Passed

Settlement Agreement

On motion of Mayor Pro Tempore Paul Barich, seconded by Council Member Denise Davis, the City Council unanimously approved, by roll call vote, the public disclosure of details of an Agreement of Settlement and General Release between the City of Redlands and Julie Scates. Under the terms of the agreement, the City agrees to pay Ms. Scates $92,500 to settle and dispose of disputes and controversies associated with a civil action pending in the San Bernardino Superior Court and entitled Julie Scates v. City of Redlands, et al., Case No. CIVSB 2127794.

Vote: 5 - 0 Passed

Mission Creek Zanja Storm Drain Channel

Staff requested this item be pulled from the agenda and it will be presented to the Council for consideration at a future meeting.

Market Match Program

On motion of Mayor Pro Tempore Paul Barich, seconded by Council Member Denise Davis, the City Council unanimously approved, by roll call vote, the Agreement for Services with the Ecology Center to participate in their Market Match program to distribute nutrition incentives in the amount of $7,000; approved an additional appropriation of $8,500; and approved an in-kind services grant match of $11,966.51.

Vote: 5 - 0 Passed

In-kind Support The Run Through Redlands Event

On motion of Mayor Pro Tempore Paul Barich, seconded by Council Member Denise Davis, the City Council unanimously determined, by roll call vote, that authorization for the items associated with the Run Through Redlands, hosted by the Kiwanis Club, on March 3, 2024, are categorically exempt from environmental review pursuant to Section 15061 (b)(3) of the State's Guidelines for Implementing the California Environmental Quality Act; and authorized and approved the expenditure of city resources and in-kind support in the amount of $29,738; approved the temporary street closures, and the sale and consumption of alcoholic beverages all associated with the Run Through Redlands event scheduled for March 3, 2024.

Vote: 5 - 0 Passed

Art-On-State-Street Event

Facilities and Community Services Department Director Crocker introduced the request from the Redlands Art Association for commercial vendors and the temporary closure of State Street for the Art-On-State-Street event on March 24, 2024. As public comment, Joshua Hall was concerned this event was not hosted by the Redlands Art Association, as stated in the report, but instead by Stronger Together Now, and he said this creates a traffic boondoggle when streets are closed.

On motion of Council Member Jenna Guzman-Lowery, seconded by Council Member Denise Davis, the City Council unanimously determined, by roll call vote, that approval of the event is exempt from environmental review pursuant to Section 15311(c) of the State's guidelines implementing the California Environmental Quality Act; and approved the Art-On-State-Street event, authorizing the request for commercial vendors and the temporary street closure of State Street on March 24, 2024.

Vote: 5 - 0 Passed

Kid's Cures Foundation Downtown Redlands Artwalk In-kind Support

Facilities and Community Services Department Crocker introduced the in-kind support request of $5,734.00 from Kid's Cures Foundation, for the Downtown Redlands Artwalk to be held on March 17, 2024 and a request to close East State and 5th Street and authorizing the request for the sale and consumption of alcoholic beverages in Ed Hales Park. As public comment, Dennis Bell pointed out the event host was an out-of-town organization, and he questioned why the group was using the nonprofit status documentation of Youth Hope. He asked why this art walk event needed to close off so many downtown streets, whereas the Redlands Art Association event only requested the closure of one street. Director Crocker

clarified that the group did provide evidence of their nonprofit status.

On motion of Council Member Jenna Guzman-Lowery, seconded by Council Member Denise Davis, the City Council unanimously determined, by roll call vote, that approval of the event is exempt from environmental review pursuant to Section 15311(c) of the state's guidelines implementing the California Environmental Quality Act; approved a request for in-kind support of $5,734.00 for this event; authorized the temporary street closures on March 17, 2024; and approved the request for the sale and consumption of alcoholic beverages in Ed Hales Park.

Vote: 5 - 0 Passed

Zanja Trail Parking Lot Grant Agreement

On motion of Mayor Pro Tempore Paul Barich, seconded by Council Member Denise Davis, the City Council unanimously approved, by roll call vote, an additional appropriation in the amount of $200,000 from the Downtown Parking Reserve; determined that the granting of funds to Larry Jacinto Construction, Inc. for the construction of the Zanja Trail parking lot and street improvements serves a public purpose; and approved a Grant Agreement with Larry Jacinto Construction, Inc. in the amount of $200,000 for the construction of a parking lot and street improvements to serve the Zanja Trail.

Vote: 5 - 0 Passed

Resolution No. 8561 Resources Recycling and Recovery Grant Program

On motion of Mayor Pro Tempore Paul Barich, seconded by Council Member Denise Davis, the City Council unanimously adopted, by roll call vote, Resolution No. 8561 designating an authorized representative to apply for the Department of Resources Recycling and Recovery grant program in furtherance of the State of California's efforts to reduce, recycle, and reuse solid waste generated in the state.

Vote: 5 - 0 Passed

COMMUNICATIONS

2022-23 ACFR & Audit Results

Management Services/Finance Director Garcia introduced Andrew Roth of The Pun Group, who provided a detailed analysis of the City's Annual Comprehensive Financial Report (ACAFR) and the Independent Accountants' Report on Applying Agreed-Upon Procedures related to the Article XIII-B Appropriations Limit Calculation for the fiscal year ending June 30, 2023. State statute and federal funding requirements stipulate the need for an annual audit to be conducted by independent certified public accountants. The ACFR presents the City's financial condition and activity in a transparent and structured manner and provides historical and comparative information. Topic areas included: Scope of Work and Timing, Required Communications, Overview of Financial Statements, Key Financial Indicators and Pension and OPEB Information and Audit Results. Auditors are required to review and approve the appropriations calculation as part of their audit, and they found no

exceptions to the City's calculation of the appropriations limit.

Financial Statements were fairly presented in all material respect. Accounting policies were consistently applied. Estimates were reasonable and disclosures were properly reflected in the financial statements. Other results included: No disagreement with Management, No material weaknesses and/or significant deficiencies were identified in internal control over financial reporting; No accounting issues; No inappropriate activities were noted. There were no material weaknesses and/or significant deficiencies reported.

As public comment, Dennis Bell was unhappy that such a lengthy report had been released to the public late last week, giving very little opportunity to review it thoroughly, and he questioned how he could be certain the numbers were accurate. Bruce Laycook found the report too dense to fully understand, and he requested that in the future, the City provide an executive summary to better help the Council and the public understand the document. City Manager Duggan agreed that the document was lengthy but that the practice of an audit was complex. He suggested the budget document was a more easily understandable report and one that was more informative to the public. He said to look for the proposed budget in the next few months. Council Members thanked Director Garcia and her staff for all their work towards developing the ACAFR.

On motion of Council Member Jenna Guzman-Lowery, seconded by Council Member Mario Saucedo, the City Council unanimously accepted, by roll call vote, the City of Redlands Comprehensive Annual Financial Report and the Independent Accountants' Report on Applying Agreed-Upon Procedures Related to the Article XIII-B Appropriations Limit Calculation for the fiscal year ending June 30, 2023.

Vote: 5 - 0 Passed

Human Relations Commission Annual Report

Commission Chair Ken Ford offered the Annual Report of the Human Relations Commission, listing activities and accomplishments for 2023 that included, support of the Salvation Army's Annual Thanksgiving Dinner for homeless and low-income residents, affirmation of the City's support for National Coming Out Day, hosting the first Annual Health and Wellness Fair, and assisting the Church of Jesus Christ of Latter-day Saints and the Family Service Association in their Annual Food Drive. With new members and a new student member, the Commission was off to a great start for 2024. The annual planning meeting was held on January 27 and Commissioners look forward to implementing new programs and projects.

Traffic and Parking Commission Annual Report

Traffic and Parking Commissioner Eric Shamp provided the annual report and review of the Commission's accomplishments over the past year. He highlighted the Commission's purpose and mission was to promote safety, improve traffic conditions and the enforcement of traffic regulations. He described projects the Commission had reviewed and recommended for City Council's consideration, with the recent downtown parking study review consuming several commission meetings. Mr. Shamp put forward a number of suggestions to make the TPC a more effective body, one that addresses all the public's

concerns and all modes of transportation, such as cyclists. He was looking forward to discussing these recommendations with Council Members.

Cannabis Regulatory and Taxation Options

Council Member Guzman-Lowery requested this item be removed from the agenda.

PUBLIC HEARINGS

Resolution Nos. 8548 and 8549 CFD Annexation No. 29

Mayor Tejeda opened the hearing and called on Development Services Director Desatnik for a report on Resolution Nos. 8548 and 8549 and a request from Meritage Homes of California, Inc. to annex territory to Community Facilities District No. 2004-1 for the purposes of performing maintenance of parks, infiltration basins, catch basin inlets, fossil filters, landscaping, and street trees within letter lot "A" and street right-of-way adjacent to Tract Map No 20336, and any other public services authorized by the act. City Clerk Donaldson agreed to hold the special election within the annexing territory on February 20, 2024. With no further comments, Mayor Tejeda closed the public hearing. City Clerk Donaldson conducted the special election and announced the results, which determined the required two-thirds of the votes cast (59-0) were in favor of levying the tax.

On motion of Council Member Jenna Guzman-Lowery, seconded by Mayor Eddie Tejeda, the City Council unanimously determined, by roll call vote, that adoption of Resolution Nos. 8548 and 8549 are not subject to environmental review pursuant to Section 15061 (b)(3) of the California Environmental Quality Act, as the adoption of these Resolutions does not have the potential to cause a significant effect on the environment; and approved Resolution No. 8548 calling a special election of the question of levying special taxes within the territory to be annexed to CFD No. 2004-1 and; On motion of Mayor Eddie Tejeda, seconded by Mayor Pro Tem Paul Barich, the City Council unanimously approved Resolution No. 8549 declaring the voting results of the special election of Annexation No. 29 to Community Facilities District No. 2004-1 were in favor of levying the tax, and therefore, the territory will be annexed to the CFD No. 2004-1.

Vote: 5 - 0 Passed

NEW BUSINESS

Contract Award 2023 Citywide Sidewalk and ADA Ramp Replacement Project

Municipal Utilities and Engineering Director Harris reviewed a Public Works Construction Contract with Tryco General Engineering for the 2023 Citywide Sidewalk and ADA Ramp Replacement Project for an amount not-to-exceed $1,000,000. He added that a bid protest, submitted by TTS Engineering, was filed. After carefully reviewing the protest and consulting with the City Attorney's office, staff determined that Tryco General Engineering's bid was responsive with only minor, inconsequential bid irregularities and therefore, recommended the City Council reject the bid protest. The 2023 Citywide Sidewalk and ADA Ramp Replacement Project (Project) will replace approximately five miles of lifted

and broken sidewalks and forty-seven ADA curb ramps in various locations throughout the City. As public comment, Bruce Laycook asked how residents could report their concerns about specific sidewalks that may need repair. Director Harris said that the public was encouraged to contact his department about any concerns they had, and he added that staff will be updating the current sidewalk survey.

On motion of Council Member Mario Saucedo, seconded by Mayor Pro Tempore Paul Barich, the City Council unanimously determined, by roll call vote, that approval of the 2023 Citywide Sidewalk and ADA Ramp Replacement Project is exempt from environmental review in accordance with Section 15301(c) of the State's Guidelines implementing the California Environmental Quality Act; approved the 2023 Citywide Sidewalk and ADA Ramp Replacement Project plans and specifications; rejected a bid protest; and approved the Public Works Construction Contract to Tryco General Engineering for an amount not-to-exceed $1,000,000.

Vote: 5 - 0 Passed

Wastewater Treatment Plant On-call Engineering & Support Services

Municipal Utilities and Engineering Director Harris described a Professional Services Agreement and Sole Source Request for Landfill Gas Engineering Inc. for on-call engineering and support services for the wastewater treatment plant with an initial one-year term value not-to-exceed $215,000 with options to extend for two additional years for a total amount not-to-exceed $645,000.

On motion of Council Member Jenna Guzman-Lowery, seconded by Council Member Mario Saucedo, the City Council unanimously determined, by roll call vote, that approval of a Professional Services Agreement with Landfill Gas Engineering Inc. is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and approved a Professional Services Agreement and Sole Source Request with Landfill Gas Engineering Inc. for on-call engineering and support services for the wastewater treatment plant with an initial one (1) year term value not-to-exceed $215,000 with options to extend for two (2) additional years.

Vote: 5 - 0 Passed

Sale of South Mountain Water Company Shares

Municipal Utilities and Engineering Director Harris provided background of the Agreement to sell 646 South Mountain Water Company shares to Yucaipa Valley Water District (YVWD) for $323,000. Staff received an unsolicited proposal from YVWD to purchase the City's remaining South Mountain Water Company (SMWC) shares. On January 16, 2024, the City Council approved a Stock Sale Agreement to sell fifteen SMWC shares to YVWD for $500 per share, for a total of $7,500, to allow YVWD to attend the 2024 SMWC Annual Stockholders Meeting while they finalize their due diligence effort. YVWD recently completed their due diligence effort and is now prepared to execute a Stock Sale Agreement for the City's remaining 646 SMWC shares for $500 per share, for a total of $323,000. The Stock Sale Agreement with YVWD formalizes the transaction terms and also requires YVWD to continue SMWC non-potable water service to Crafton Hills Community College

until their landscape irrigation system is connected to the YVWD recycled water distribution system. The transaction will generate $323,000 in un-budgeted revenue for the Water Fund. As public comment, Bruce Laycook questioned if the funds were restricted for a certain purpose. Director Harris clarified that the funds could only be used for water projects and that at this time, the funds had not been earmarked for a specific project.

On motion of Council Member Jenna Guzman-Lowery, seconded by Mayor Pro Tempore Paul Barich, the City Council unanimously determined, by roll call vote, that approval of the Stock Sale Agreement to sell 646 South Mountain Water Company shares to Yucaipa Valley Water District is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act; and approved a Stock Sale Agreement to sell 646 South Mountain Water Company shares to Yucaipa Valley Water District for a total sale price of $323,000.

Vote: 5 - 0 Passed

Contract Award Redlands Fire Station No.262 Remodel Project

Assistant City Manager Boatman presented a Public Work Contract with Elegant Construction, Inc., for the Redlands Fire Station No.262 Remodel Project, for an amount not-to-exceed $2,160,000. The Fire Department oversees operations at four fire stations throughout the city, including Fire Station 262, located at 1690 Garden Street. This station was originally built in 1965, serving as a vital hub in ensuring the safety and well-being of the community. The scope of the project includes the construction of new spaces and the remodeling of certain areas within the existing 3,683 SF one-story building and new additions consisting of a fitness room and six crew dormitories. Site improvements consist of CMU retaining walls, tube steel fencing, a crew parking area, and landscaping. City Manager Duggan was pleased to report that this project, when completed, will accommodate multiple genders.

On motion of Council Member Jenna Guzman-Lowery, seconded by Council Member Denise Davis, the City Council unanimously determined, by roll call vote, that approval of a Public Work Contract with Elegant Construction, Inc. for the Redlands Fire Station No.262 Remodel Project is exempt from environmental review pursuant to Section 15301(d) of the State's guidelines implementing the California Environmental Quality Act; and approved an award of a Public Work Contract to Elegant Construction, Inc. in the amount of $2,160,000 for the Redlands Fire Station No.262 Remodel Project.

Vote: 5 - 0 Passed

Tree Maintenance and Arboricultural Services

Facilities and Community Services Department Director Crocker detailed the Intergovernmental/Piggy-back Cooperative Agreement with West Coast Arborists, Inc. (WCA) and related Non-Professional Services for Improvement to Public Buildings and Grounds Agreement to provide tree maintenance and arboricultural services for a total amount not to exceed $3,600,000. Staff was able to secure contract terms, by way of opting to "piggy-back" off an existing maintenance contract between WCA and the City of Claremont. Claremont City Council approved the contract on June 13, 2023 with an initial

three-year term, with two additional one-year terms for a total of five years, with the contract including a purchasing provision that states "any other public agency shall have the option to participate in any award made as a result of this solicitation at the same prices." Staff recommended to award a piggy-back contract with WCA for an amount not to exceed $3,600,000. This is based off $1.2 million per year. Award of this piggy-back contract will mitigate the City from potential inflationary impacts by providing fixed operation pricing and cost certainty through February 2027. Additionally, the recommended contract terms will enable the City to maintain its current level of tree service and tree trimming scheduling.

Under the proposed extension, WCA will continue to proactively prune 7,000 to 9,000 trees per year, supporting a 5-7 year pruning cycle for street and park trees. In addition to scheduled citywide pruning activities, WCA facilitates reforestation efforts, provides as-needed support for emergencies and/or tree removals, administers field inventory for all city-owned and maintained trees, and provides the organization with a web-based system that tracks work orders, project budgets, and tree maintenance history. Council Member Saucedo applauded the use of the Intergovernmental/Piggy-back agreement since this provides cost savings for the City.

On motion of Council Member Jenna Guzman-Lowery, seconded by Council Member Denise Davis, the City Council unanimously approved, by roll call vote, the Intergovernmental/Piggy-back Cooperative Agreement with West Coast Arborists, Inc. and related Non-Professional Services for Improvement to Public Buildings and Grounds Agreement to provide tree maintenance and arboricultural services for a three-year term for an amount not to exceed $3,600,000.

Vote: 5 - 0 Passed

COUNCIL MEMBER ANNOUNCEMENTS AND ACTIVITIES

Mayor Tejeda and Mayor Pro Tem Barich enjoyed the Lincoln Dinner on February 12, 2024 and participated in the celebration of the Shrine's 90th anniversary.

Council Member Davis attended the Johnston Center for Integrative Studies reunion at the University of Redlands.

Council Member Guzman-Lowery continued to meet with several residents to discuss their pressing concerns.

Council Member Saucedo reminded everyone the Community Day of Service was scheduled for Saturday, March 9, 2024. With Black History Month in mind, he acknowledged the long-standing African American families of the Butler and Hubbard families, and he recognized Amos Issac, an educator, community leader and an alumnus of the University of Redlands. He also highlighted an upcoming event at The Village 2nd Baptist Church where the history of Stuart Avenue will be presented.

ADJOURNMENT

There being no further action required, the meeting adjourned at 7:31 P.M. The next regular meeting of the City of Redlands City Council will be held on March 5, 2024.

MINUTES

Special meeting of the City Council of the City of Redlands held in the Council Chambers, Civic Center, 35 Cajon Street, on February 21, 2024 at 6:30 P.M.

Present: Eddie Tejeda, Mayor
Paul Barich, Mayor Pro Tempore
Denise Davis, Council Member
Jenna Guzman-Lowery, Council Member
Mario Saucedo, Council Member

Staff: Charles M. Duggan, Jr., City Manager; Yvette M. Abich Garcia, City Attorney; Jeanne Donaldson, City Clerk; Phillip Doolittle, City Treasurer; Janice McConnell, Assistant City Manager; Chris Boatman, Assistant City Manager; Carl Baker, Public Information Officer; Danielle Garcia, Management Services/Finance Director; Brian Desatnik, Development Services Director; John Harris, Municipal Utilities and Engineering Director; Rich Sessler, Fire Chief; Rachel Tolber, Police Chief; Tabitha Crocker, Facilities and Community Services Director; Robert Meteau, HR/Risk Management Director

Mayor Tejeda called the special meeting to order and explained that comments could be presented in-person, via Zoom, via cell phone or landline. He offered the public an opportunity to provide comment on any matter scheduled on this agenda or any matter within the jurisdiction of the City Council which is not already scheduled on this agenda.

PUBLIC COMMENT

None forthcoming

FISCAL YEARS 2025-2026 BUDGET PRIORITIES WORKSHOP

City Manager Duggan explained this special meeting was meant to give Council Members an opportunity to rank priority focus areas to aid staff in the development of the next Biennial Budget for Fiscal Years 2025 and 2026. Staff identified 18 priority focus areas which were provided to each individual Council Member on a ranking form. Council Members were tasked to rank the priority focus areas from 1 to 18, with 1 being the highest priority and 18 being the lowest. Each one submitted their completed ranking forms to the City Manager. Additionally, Council Members had the opportunity to write-in two additional priority areas, with Mayor Tejeda and Council Member Davis each submitting two write-in projects to add to the list.

The eighteen priority focus areas were included in the staff report and listed in order of their total aggregate scores, from lowest to highest, as received from each Council Member's individual ranking forms. The list was intended to serve as a guide and starting point for the Council's discussion at the workshop. Additionally, when available, service scores and/or budgetary priority rankings derived from the 2023 Citizen Survey were included with the corresponding item. The four write-in projects were not ranked among the original eighteen items.

The 18 focus areas included: Animal Shelter Improvements, Police Department Staffing, Park Improvements, Sidewalk/Curb Repair, New Police Department, Youth and Senior Programs, Aging Infrastructure Replacement, Climate Action Plan, Homeless Solutions General, Homeless Solutions Mental Health Team, Affordable Housing, Downtown Parking, City-wide Street Resurfacing, Emergency Management, Code Enforcement Staffing, Technology Improvements, Communication and Engagement and Museum Construction. Four write-ins included: Police Patrol Units, Colton Avenue and Orange Street Beautification, Sustainability/Climate Change Budget and Community Choice/Clean Energy.

As public comment, Eric Shamp offered criteria to consider when prioritizing, such as the reduction of harm, project timelines with short and long term goals, the interconnection between projects, and the consequences of taking no action at all. Bobby Garrity pointed out the City was in a housing shortage crisis and, in particular, a lack of affordable housing, and he urged the Council to reform policies that inhibit development, adding he also supported the use of funds for the Climate Action Plan, Sustainability/Mitigation projects and Clean Energy. Dennis Bell thought the criteria proposed by Eric Shamp were useful, and he was concerned about spending taxpayer money on a Mental Health Team and Museum Construction. Brianna Egan spelled out her reasons for supporting Climate Action, Affordable Housing and Street Resurfacing.

Throughout a lengthy discussion filled with dialogue and questions, Council Members provided their thoughts and perspectives on the various projects, listing their top individual choices. They were thankful for the great input as presented by the speakers, and with a spirit of compromise, the first ranking outcome led to the selection of the groups' top six projects, included in no specific order:

Item A) Animal Shelter
Item H) Climate Action Plan
Item B) Increased Police Department Staffing
Item E) New Police Department site
Item K) Affordable Housing
Item L) Downtown Parking Study

Additionally, the Council selected four more projects to represent ranking numbers 7-10. These projects included:

Item C) Park Improvements
Item G) Aging Infrastructure Replacement
Item I) Homelessness (General)
Item O) Code Enforcement Staffing

City Manager Duggan closed the meeting stating the prioritized list of the top ten projects provides sufficient guidance for staff to develop appropriate funding plans to be included in the next biennial budget for FY 2025 and 2026.

ADJOURNMENT

There being no further action required the special meeting adjourned at 7:37 P.M.

City Council/Successor Agency Meeting **I. 2.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Approve recommendation for appointment to the Human Relations Commission (Council Member Saucedo)

MOTION:

I move to appoint Roop Kishor Goyal to serve the remainder of a four-year term on the Human Relations Commission ending July 18, 2025.

RECOMMENDATION:

In accordance with Redlands Municipal Code Section 2.66.020, nominations to this Commission are made on a rotational basis by members of the City Council. Council Member Saucedo was next in rotation to make a recommendation to City Council. Council Member Saucedo is recommending the Council to appoint the individual listed below to serve the remainder of a four-year term ending on July 18, 2025, on the Human Relations Commission.

Recommendation	Council Member
Roop Kishor Goyal	Council Member Saucedo

DISCUSSION:

A vacant seat exists on the Human Relations Commission due to the recent termination of Commissioner Shaheen Zakaria whose term expires on July 18, 2025.

There were 10 eligible applications received from a previous posting. Those applications were considered for filling this vacancy.

The Human Relations Commission consists of nine members as follows:

- Claudia Ruiz
- Vanessa Annaguey Aranda
- Roy George
- Neha Agarwal
- Vacant
- Kennth Ford
- Julie Houston
- Gail Howard
- Ryan Chau (Student)

ALTERNATIVES:

The City Council may choose not to support the recommendation and direct staff to seek further applications for consideration.

SUBMITTED BY:
Jennifer Macias, Management Analyst

REVIEWED BY:
Charles M. Duggan, Jr., City Manager
Janice McConnell, Assistant City Manager

Attachments

Human Relations Applications

CITY OF REDLANDS
COMMISSION APPLICATION FORM

City Manager's Offic

(Please note that this form is a public record that may be subject to disclosure upon request.)

MAY 10 2023

COMMISSION\BOARD APPLIED FOR
Human Relations Commission

Received

Germaine Miles

Name [redacted]

Address [redacted]

N/A

Telephone (Work) [redacted] (Cell / Home) _____

Email [redacted]

Retired

Occupation _____

Reasons for desiring to serve – relevant experience and qualifications:
I have a deep love and passion for the City of Redlands.

I 2019, I retired after a 45 year career in senior leadership with AAA.

My career provided me significant experience in commnity relations, customer relations and employee relations.

With this experience and my desire to serve my community I would be a positive influence

and effective member of this commission.

Signature [signature] **Date** 5/10/23

** If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)*

Two References: (Please do not include Councilmembers or City Staff)

(1) Sean Rooks
[redacted]
Redlands
[redacted]
Telephone _____

(2) Erica Horan
[redacted]
Redlands
[redacted]
Telephone _____

Return Application to: **Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org**

You will be notified of appointments by the City Council. Your application will be retained for one year. PLEASE NOTE: Planning Commissioners and Historic & Scenic Preservation Commissioners are required to file Statements of Economic Interest in accordance with California State Law.

✓ address verified

CITY OF REDLANDS
COMMISSION APPLICATION FORM

City Manager's Office

(Please note that this form is a public record that may be subject to disclosure upon request.)

MAY - 9 2023

COMMISSION\BOARD APPLIED FOR

Human Relations Commision

Received

Name Jennifer M. Maravillas

Address [redacted]

Telephone (Work) _____ (Cell / Home) [redacted]

Email [redacted]

Occupation Communications Consultant, Kaiser Permanente

Reasons for desiring to serve – relevant experience and qualifications:

I believe my personal interests and background would be a great fit for the commission.

I hold a BA in International Relations with and emphasis in Culture and Identity and a MA in Communications

with my thesis and specialization focused on promoting Culture and Diversity. Being new to the City,

I would love the opportunity to get involved in my community and this opportunity seems like a perfect fit.

I have several years of volunteer and/or consulting experience outside my 10+ of professional paid experience.

Signature Jennifer M. Maravillas **Date** 5/10/2023

** If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)*

Two References: (Please do not include Councilmembers or City Staff)

(1) Mark Stowitts

Telephone [redacted]

(2) Eddie De La Torre

Telephone [redacted]

Return Application to: Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org

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✓ address verified

City Manager's Office

CITY OF REDLANDS
COMMISSION APPLICATION FORM

(Please note that this form is a public record that may be subject to disclosure upon request.)

MAY 15 2023

Received

COMMISSION\BOARD APPLIED FOR

Human Relations Commission

Name Jolene E. Barrow

Address [redacted]

Telephone (Work) [redacted] (Cell / Home) [redacted]

Email [redacted]

Occupation Executive UniServ Director

Reasons for desiring to serve – relevant experience and qualifications:

I am deeply involved in human rights and social justice issues throughout the state. In fact I do trainings on these areas for public educators.

Signature Jolene E. Barrow **Date** May 16, 2023

** If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)*

Two References: (Please do not include Councilmembers or City Staff)

(1) Mary Ambriz
[redacted]
Redlands, CA 92373
Telephone [redacted]

(2) Barbie Fiske Phillips
[redacted]
Redlands, CA 92374
Telephone [redacted]

Return Application to: Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org

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CITY OF REDLANDS
COMMISSION APPLICATION FORM

(Please note that this form is a public record that may be subject to disclosure upon request.)

COMMISSION\BOARD APPLIED FOR

Human Relations Commission

Name Kara Torbert

Address [redacted]

Telephone (Work) _____ (Cell / Home) [redacted]

Email [redacted]

RECEIVED
MAY 18 2023
Redlands City Clerk

Occupation Self-employed

Reasons for desiring to serve – relevant experience and qualifications:

I have 10+ years of experience as a nonprofit program manager, training, relationship building, and leading teams; and my passion is to design and create people programs that are intentional, values-based, and inclusive. Additionally, I recently moved back to my hometown of Redlands, and hope to be involved in the community to create a safe, peaceful environment for all residents regardless of their race or national origins. I think my experience and motivation make me a great candidate for this commission, and I hope to be considered.

Signature Kara Torbert Digitally signed by Kara Torbert Date: 2023.05.15 11:55:46 -07'00' **Date** 5/15/23

** If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)*

Two References: (Please do not include Councilmembers or City Staff)

(1) Holland Stewart
Lawyer
Leadership Redlands Member
Telephone [redacted]

(2) Kelly Patton
UC Riverside Digital Marketing
Redlands Bowl Associates
Telepho[redacted]

Return Application to: **Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org**

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✓ address verified

City Manager's Office

MAY - 9 2023

Received

CITY OF REDLANDS
COMMISSION APPLICATION FORM

(Please note that this form is a public record that may be subject to disclosure upon request.)

COMMISSION\BOARD APPLIED FOR

Human Relations Commission

Name Lorraine Enriquez

Address [redacted]

Telephone (Work) [redacted] (Cell / Home) [redacted]

Email [redacted]

Occupation Insurance Broker

Reasons for desiring to serve – relevant experience and qualifications:

As the city grows and new residents move into Redlands, the city dynamics are changing.I have 20 years experince wotrking with very diverse populations and have served on the Street Tree Committee. Understanding & adapting to new cultures is a key element to both preserve our small town essence and consider diversity. Our city is the Jewel of the Inland Empire and it is important to continue to shine and be an example for other surrounding cities. Redlands has an opportunity to grow in positive ways through commerce/new busineses and at the same time welcome diversity and inclusion in harmony.

Signature [signature] **Date** 5/9/23

If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)

Two References: (Please do not include Councilmembers or City Staff)

(1) Susan Abt

[redacted]

Redlands CA 92373

Telephone [redacted]

(2) Ana McNaughton

[redacted]

Redlands CA 92373

Telephon [redacted]

Return Application to: **Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org**

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✓ address Verified

CITY OF REDLANDS
COMMISSION APPLICATION FORM

(Please note that this form is a public record that may be subject to disclosure upon request.)

City Manager's Office

COMMISSION\BOARD APPLIED FOR

Human Relations Commission

MAY 15 2023

Name Nanette Peykani

Address [redacted] Received

Telephone (Work) [redacted] (Cell / Home) [redacted]

Email [redacted]

Occupation Director of Human Resources

Reasons for desiring to serve – relevant experience and qualifications:

As a 30 +year resident of Redlands I have volunteered in the schools when my children attended Kimberley and Moore Middle School with tutoring, chaperoning, and serving on multicultural committees. I was a judge for Redlands High Speech and debate for 4 years. I am a CERT volunteer since 2015. I currently work in Senior Care and recognize the many issues our aging population faces including our service veterans, individuals living with Alzheimers, and the struggle families face to provide care.

Signature [signature] **Date** 05/11/2023

** If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)*

Two References: (Please do not include Councilmembers or City Staff)

(1) Scott Sterl
[redacted]
Redlands, CA 92374
Telephone [redacted]

(2) Manny Hernandez III
Redlands, CA 92373
Telephone [redacted]

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✓ address verified

City Manager's Office

CITY OF REDLANDS
COMMISSION APPLICATION FORM

MAY 18 2023

(Please note that this form is a public record that may be subject to disclosure upon request.)

Received

COMMISSION\BOARD APPLIED FOR

Human Relations Commission

Name Oluwatosinmile Joyce Afolabi

Address [redacted]

Telephone (Work) [redacted] (Cell / Home) [redacted]

Email [redacted]

Occupation Student - Junior at Redlands High School

Reasons for desiring to serve – relevant experience and qualifications:

My reason for desiring to serve in this commission is to contribute in my own way to the development of this community redlands. My experience as part of the student goverment in my school will be of great help in contributing ideas on how to foster peaceful relations among people of different races

Signature [signature] **Date** 5/17/23

** If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)*

Two References: (Please do not include Councilmembers or City Staff)

(1) Jonn Adeniji

Telephone [redacted]

(2) Jamie Ochoa

~~email:~~

Telephone [redacted]

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✓ address verified

City Manager's Office

CITY OF REDLANDS
COMMISSION APPLICATION FORM

(Please note that this form is a public record that may be subject to disclosure upon request.)

MAY 11 2023

COMMISSION\BOARD APPLIED FOR

HUMAN RELATIONS COMMISSION

Received

Name Roop Kishor Goyal

Address [redacted]

Telephone (Work) _____ (Cell / Home) [redacted]

Email [redacted]

Occupation Software Engineer

Reasons for desiring to serve – relevant experience and qualifications:

I would like to understand the civic processes and contribute to them.

I have a Ph D in Spatial information engineering.

I have been working as a software eningeer for 23 years.

Our daughters attended Redlands district schools and have turned out to be responsible professionals.

I will be glad to serve the city where we live.

Signature _____ **Date** 05/10/2023

**** If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)***

Two References: (Please do not include Councilmembers or City Staff)

(1) Jayesh Patel

[redacted]

Redlands, CA

Telephone [redacted]

(2) Mahesh Rawal

[redacted]

Redlands, CA

Telephone [redacted]

Return Application to: Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org

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✓ address Verified

RECEIVED

MAY 15 2023

Redlands City Clerk

CITY OF REDLANDS
COMMISSION APPLICATION FORM

(Please note that this form is a public record that may be subject to disclosure upon request.)

COMMISSION\BOARD APPLIED FOR

Human Relations Commission

Name Shannon Steel-Dean

Address [redacted]

Telephone (Work) _____ (Cell / Home) [redacted]

Emai [redacted]

Occupation Construction Office Manager, Real Estate Agent, Short-term rental specialist

Reasons for desiring to serve – relevant experience and qualifications:

As a 2nd generation Redlands native, who is committed to social equality through compassion and kindness, I would ensure that the diverse needs and perspectives of the community are represented. My open-mindedness, and willingness to listen and learn from others will enable me to work collaboratively with council members and the community members alike. Moreover, my patient and human-driven approach will enable me to prioritize the well-being and dignity of all community members, especially those who may be marginalized or disavantaged, so that everyone can feel valued and respected regardless of their background or identity.

Signature _____ **Date** May 11, 2023

** If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)*

Two References: (Please do not include Councilmembers or City Staff)

(1) Megan Jennings

Telephone [redacted]

(2) Kameryn Campbell

Telephone [redacted]

Return Application to: **Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org**

You will be notified of appointments by the City Council. Your application will be retained for one year. PLEASE NOTE: Planning Commissioners and Historic & Scenic Preservation Commissioners are required to file Statements of Economic Interest in accordance with California State Law.

✓ address verified

CITY OF REDLANDS
COMMISSION APPLICATION FORM

(Please note that this form is a public record that may be subject to disclosure upon request.)

City Manager's Office

COMMISSION\BOARD APPLIED FOR
Human Relations Commission

MAY 15 2023

Name Susan Abt

Address [redacted]

Received

Telephone (Work) [redacted] (Cell / Home) [redacted]

Email [redacted]

Occupation RUSD teacher for 28 years

Reasons for desiring to serve – relevant experience and qualifications:

As the president of the Redlands Teachers Association, I know the importance for members to feel seen, heard, and represented.

I work hard to build leadership in my organization, especially with women and people of color.

I have built a collaborative relationship with RUSD and the union, including our superintendent, managers, and school board trustees

I am also a Vice Chair of CTA's Women's Caucus with the responsibility of membership and engagement.

I am a Vice Chair of CTA's Early Childhood Committee. We are tasked with promoting the needs of EC educators in CTA and with CA legislators

Signature Susan Abt **Date** 5/14/2023

If appointed, please be advised that all City commissioners and committee/board members must complete mandatory harassment prevention training consistent with the requirements of Assembly Bill No. 1825. (Resolution No. 7206 adopted July 26, 2012)

Two References: (Please do not include Councilmembers or City Staff)

(1) Mauricio Arellano
former RUSD Superintendent
current SBCUSD Superintendent
Telephone [redacted]

(2) Vanessa Aranda
teacher & colleague
Telephon[redacted]

Return Application to: **Office of the City Council, C/O Office of the City Manager, Suite 200, 35 Cajon Street, PO Box 3005, Redlands, CA 92373, OR by email to RedlandsOCM@cityofredlands.org**

You will be notified of appointments by the City Council. Your application will be retained for one year. PLEASE NOTE: Planning Commissioners and Historic & Scenic Preservation Commissioners are required to file Statements of Economic Interest in accordance with California State Law.

Voaddress Verified

City Council/Successor Agency Meeting **I. 3.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Adopt Resolution No. 8558 Delegating Investment Authority to the City Treasurer Pursuant to Government Code Section 53607 (Management Services/Finance Director Garcia)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motion is provided:

I move to adopt Resolution No. 8558.

RECOMMENDATION:

Staff recommends that the City Council adopt Resolution No. 8558 to authorize the annual delegation of duties of investing funds of the City to the City Treasurer in accordance with Government Code Section 53607.

DISCUSSION:

Government Code Section 53607 allows the City Council to delegate the authority of investing funds of the City to the City Treasurer for a one-year period.

ALTERNATIVES:

Not Applicable.

STRATEGIC PLAN:

Not Applicable.

SUBMITTED BY:
Danielle Garcia, Management Services/Finance Director

RECOMMENDED BY:
Phillip Doolittle, City Treasurer

REVIEWED BY:
Charles M. Duggan, Jr. City Manager
Yvette Abich Garcia, City Attorney
Janice McConnell, Assistant City Manager

PREPARED BY:
Aimee Hoover, Revenue Supervisor

Fiscal Impact

Discussion:

There is no fiscal impact associated with approval of this resolution.

Attachments

Resolution No. 8558 - Annual Delegation of Authority 2024

RESOLUTION NO. 8558

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS DELEGATING INVESTMENT AUTHORITY TO THE CITY TREASURER PURSUANT TO GOVERNMENT CODE SECTION 53607

WHEREAS, Government Code section 53607 authorizes the City Council to delegate the duties of investing or reinvesting funds of the City, or to sell or exchange securities so purchased, to the City Treasurer for a period not exceeding one year; and

WHEREAS, it is the desire of the City Council to delegate investment authority of City funds to the City Treasurer;

NOW, THEREFORE, be it resolved by the City Council of the City of Redlands as follows:

Section 1. That the City Treasurer is hereby delegated the authority to invest, or reinvest funds of the City, or to sell or exchange securities so purchased, for the period commencing on March 16, 2024, through March 15, 2025, pursuant to Government Code Section 53607.

Section 2. That the City Treasurer shall prepare a monthly report for the City Council of all transactions subject to this Resolution, as required by Government Code Section 53607.

ADOPTED, SIGNED AND APPROVED this 5th day of March 2024.

_____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____

Jeanne Donaldson, City Clerk

City Council/Successor Agency Meeting **I. 4.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Approve the Memorandum of Understanding between the City of Redlands and the City of Victorville for the loan of a Fire Tiller Truck to Victorville Fire Department (Fire Chief Sessler)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motion is provided:

I move to approve the Memorandum of Understanding between the City of Redlands and the City of Victorville for the loan of a Fire Tiller Truck.

RECOMMENDATION:

Staff recommends the City Council approve the Memorandum of Understanding between the City of Redlands and the City of Victorville for the loan of a Fire Tiller Truck for Victorville Fire Department.

DISCUSSION:

The Victorville Fire Department requires a Fire Tiller Truck for personnel training, and the Redlands Fire Department has offered to lend their available tiller truck to Victorville for this purpose. Since communication and collaboration are key to ensuring a successful and mutually beneficial arrangement, this Memorandum of Understanding (MOU) for the sharing of equipment is to help both agencies establish clear terms and conditions, including responsibilities for maintenance, insurance, and liability during the loan period. The loan period will be for three months from the effective date of the MOU.

ALTERNATIVES:

Not approve the Memorandum of Understanding for the loan of the Fire Tiller Truck.

STRATEGIC PLAN:

Priority B - Public Health & Safety

SUBMITTED BY:
Rich Sessler, Fire Chief

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Yvette M. Abich Garcia, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Bruni Reyes, Management Analyst

Fiscal Impact

Fiscal Year:	2023-2024
Revenue Generating:	N
Appropriation Required Y/N:	N

Discussion:

There is no fiscal impact with the approval of the Memorandum of Understanding (MOU) for Equipment Sharing. The City of Victorville is responsible for any costs listed in Section 5 of the MOU regarding minor maintenance and the provision of liability insurance.

Attachments

Victorville MOU

MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF REDLANDS AND THE CITY OF VICTORVILLE REGARDING EQUIPMENT SHARING

This Memorandum of Understanding for Equipment Sharing ("MOU") is dated this 5th day of March, 2024 and is entered into by and between the City of Victorville ("Victorville"), and the City of Redlands (the "CITY"). Victorville and the CITY may be referred to herein individually as a "Party" and, together as the "Parties."

RECITALS

WHEREAS, the CITY owns certain equipment including a Model & Year 1997 Pierce Quantum Cab Tiller Truck; VIN# 4P1CT02S7VA000413 (the "Equipment") for use by the Redlands Fire Department as part of its operations; and

WHEREAS, the CITY by and through the Redlands Fire Department desires to loan the Equipment to Victorville for training and development by the Victorville Fire Department; and

WHEREAS, Victorville desires to borrow the Equipment for use by the Victorville Fire Department for non-emergency training situations and, where it would be beneficial to use the Equipment in the interests of the professional development of the Department; and

WHEREAS, cooperation between Victorville, the Victorville Fire Department and the CITY will promote the efficient use of public resources used and managed by the Redlands Fire Department; and

WHEREAS, sharing Equipment with the Victorville for use by the Victorville Fire Department is intended to increase public safety, as well as the residents of and visitors to Victorville and would have only incidental or nominal benefits to any private parties; and

WHEREAS, Victorville and the CITY execute this MOU for the purpose of formalizing the terms and conditions governing the sharing of the Equipment;

NOW, THEREFORE, in consideration of the above recitals and the mutual covenants hereinafter contained, and for other good and valuable consideration, the receipt of which is hereby acknowledged, the Parties agree as follows:

AGREEMENT

Section 1. Incorporation of Recitals. The above-recitals are true and correct and are hereby incorporated into this MOU by this reference.

Section 2. Term. The term of this MOU shall commence on its Effective Date and shall continue in effect until terminated pursuant to Section 9 of this MOU.

Section 3. Authority. Unless otherwise specified herein, all authority to act on behalf of the CITY pursuant to this MOU shall be exercised by Redlands Fire Chief Rich Sessler, or his designee. Unless otherwise specified herein, all authority to act on behalf of Victorville pursuant to this MOU shall be exercised by Interim Fire Chief William Racowschi or his designee.

Section 4. Equipment.

A. The Victorville Fire Department shall be permitted to use, operate, and transport the Equipment on an "as-needed" basis as requested by the Victorville Fire Department, and approved by the CITY's designee in Section 3, in his sole discretion, when not otherwise needed for other Redlands Fire Department purposes. The Victorville Fire Department recognizes that the Redlands Fire Department's use of the Equipment may preclude the use of the Equipment by the Victorville Fire Department, and in such cases the Redlands Fire Department may deny the request to use the Equipment or demand the immediate return of the Equipment in the possession of the Victorville Fire Department, in the CITY's sole and absolute discretion.

B. Request for Use of Equipment. Those designated in this MOU with the authority to act on behalf of either Party shall work together to coordinate certain procedures to govern requests by the CITY to use the Equipment, especially for when the Equipment is needed in emergency situations. In non-emergency situations, the CITY shall request use of the Equipment as far in advance as possible by notifying the Victorville Fire Department of the need for the Equipment.

C. Use of Equipment. The Victorville Fire Department shall not permit any individual to use, operate or transport the Equipment unless that individual is properly trained and authorized to do so. The Victorville Fire Department shall use the utmost care in using, operating, or transporting the Equipment. If the Equipment breaks or experiences other mechanical problems while in the possession of the Victorville Fire Department, the Victorville Fire Department shall immediately notify the Redlands Fire Department of the problem.

D. Returning Equipment. The Victorville Fire Department shall notify the Redlands Fire Department before borrowing the Equipment of when it will return Equipment, or in the case of emergency situations, the Victorville Fire Department shall keep the Redlands Fire Department updated on when the Equipment will be returned. In the event that the Redlands Fire Department demands the immediate return of the Equipment then in the possession of the Victorville Fire Department, the Victorville Fire Department shall immediately deliver the Equipment available to the Redlands Fire Department.

Section 5. Victorville Fire Department Responsibilities. The Victorville Fire Department shall be solely responsible for all of the following, including, without limitation, any accompanying cost or expense:

A. Transporting the Equipment to and from the Redlands Fire facilities housing the Equipment.

B. Performing routine inspections and minor maintenance on Equipment when used by the Victorville Fire Department, including, but not limited to, oil, mechanical fluids, operations, fuel, and safety checks.

C. Providing satisfactory proof of liability or other insurance of the types and in the amounts as required by this MOU.

D. Bearing sole and absolute responsibility for any and all loss of or damage to the Equipment occurring while in possession and control of the Victorville Fire Department, customary wear and tear excepted. Victorville shall pay to the CITY for any and all costs associated with repairing damage to the Equipment occurring while in the possession or control of the Victorville Fire Department if demanded by the Redlands Fire Department, customary wear and tear excepted, within thirty (30) days upon receipt by the Victorville Fire Department of a written invoice accounting for such costs of repair. Victorville shall pay to the CITY for any and all costs associated with reasonably replacing the Equipment in the event of complete loss of the Equipment occurring while in the possession or control of the Victorville Fire Department, if demanded by the Redlands Fire Department, within thirty (30) days upon receipt by the Victorville Fire Department of a written invoice accounting for such costs of replacement.

E. Refueling Equipment to, at minimum, the level existing at the time the Victorville Fire Department takes control of the Equipment.

F. Storing Equipment overnight at secure facilities owned and controlled by the Victorville Fire Department when the Victorville Fire Department is in possession and control of the Equipment, when such storage is otherwise requested by the Redlands Fire Department, or when such storage is convenient to the Victorville Fire Department and approved in advance by the Redlands Fire Department.

Section 6. Cost. The Victorville Fire Department shall pay no compensation for the use of the Equipment, except for any and all costs related to the responsibilities listed in Section 5 of this MOU.

Section 7. Indemnification. To the fullest extent permitted by law, Victorville (the "Indemnifying Party) shall defend, indemnify and hold the CITY (the "Indemnified Party") and its directors, officials, officers, employees, agents, and volunteers free and harmless from any and all claims, demands, causes of action, costs, expenses, liabilities, losses, damages or injuries, including reasonable attorneys' fees and other related costs, in law or equity, to property or persons, including wrongful death, in any manner arising out of, or incident to, the use, operation or transportation of the Equipment, or this MOU, except for such loss or damage arising from the willful misconduct of the Indemnified Party. The Indemnifying Party shall defend, at the Indemnifying Party's own cost, expense and risk, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against the Indemnified Party

and its directors, officials, officers, employees, agents, and volunteers, with counsel reasonably approved by the Indemnified Party. The Indemnifying Party shall pay and satisfy any judgment, award or decree that may be rendered against the Indemnified Party and its directors, officials, officers, employees, agents, and volunteers, in any such suit, action or other legal proceeding. The Indemnifying Party shall reimburse the Indemnified Party and its directors, officials, officers, employees, agents, and volunteers for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. The Indemnifying Party's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the Indemnified Party or its directors, officials, officers, employees, and volunteers. This indemnity provision shall survive the termination of this MOU.

Section 8. Insurance.

A. Time for Compliance. Victorville shall not allow the Victorville Fire Department to use, operate, or transport the Equipment under this MOU unless and until it has provided evidence satisfactory to the CITY that it has secured all insurance required under this section, or that it is self-insured to the satisfaction of the CITY.

B. Minimum Requirements. Victorville shall, at its expense, procure and maintain for the duration of this MOU insurance against all claims for injuries to persons or damages to property which may arise from or in connection with the performance of this MOU by Victorville, its elected and appointed officials, officers, employees, and volunteers. Such insurance shall meet at least the following minimum levels of coverage, or Victorville shall be self-insured to the satisfaction of the CITY.

i. Minimum Limits of Insurance. Victorville shall maintain limits no less than: (1) General Liability: $2,000,000 per occurrence for bodily injury, personal injury, and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this MOU or the general aggregate limit shall be twice the required occurrence limit. The policy must include contractual liability that has not been amended. Any endorsement restricting standard ISO "insured contract" language will not be accepted; (2) Automobile Liability: $1,000,000 per accident for bodily injury and property damage; and (3) Workers' Compensation and Employer's Liability: Workers' Compensation limits as required by the Labor Code of the State of California. Employer's Liability limits of $1,000,000 per accident for bodily injury or disease.

ii. Endorsements. Each policy shall be endorsed to state that: (1) the CITY and its directors, officials, officers, employees, and volunteers shall be covered as additional insured with respect to the use, operation or transport the Equipment performed by or on behalf of the Victorville Fire Department; and (2) the insurance coverage shall be primary insurance as respects the CITY and its directors, officials, officers, employees, and volunteers, or if excess, shall stand in an unbroken chain of coverage excess of CITY’s scheduled underlying coverage. Any insurance

or self-insurance maintained by the CITY and its directors, officials, officers, employees, and volunteers shall be excess of such insurance obtained by the Victorville and shall not be called upon to contribute in any way. The insurer shall agree to waive all rights of subrogation against the CITY and its directors, officials, officers, employees, and volunteers for losses paid under the terms of the insurance policy which arise from the use, operation, or transport of the Equipment by the Victorville Fire Department. Each insurance policy shall also be endorsed to state that: (1) coverage shall not be suspended, voided, reduced or canceled except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the CITY's Risk Manager as applicable; and (2) any failure to comply with reporting or other provisions of the policies, including breaches of warranties, shall not affect coverage provided to the CITY and its directors, officials, officers, employees and volunteers. There shall be no cross-liability exclusion for claims or suits by one insured against another. Requirements of specific coverage features, or limits contained in this section are not intended as a limitation on coverage, limits or other requirements, or a waiver of any coverage normally provided by any insurance.

Section 9. Termination. This MOU shall be effective as of its Effective Date, and shall continue until terminated by either Party by giving at least thirty (30) days advance written notice of the effective date of termination.

Section 10. Notices. Any notice or other communication required, or which may be given, pursuant to this Agreement, shall be in writing. Any such notice shall be deemed delivered (i) on the date of delivery in person; (ii) five (5) days after deposit in first class registered mail, with return receipt requested; (iii) on the actual delivery date if deposited with an overnight courier; or (iv) on the date sent by facsimile or electronic mail transmission (including PDF), if confirmed with a copy sent contemporaneously by first class, certified, registered or express mail; in each case properly posted and fully prepaid to the appropriate address set forth below, or such other address as a Party may provide notice in accordance with this section:

If to the CITY: Redlands Fire Department
35 Cajon Street, Suite 12, Redlands CA 92373
Attn: Fire Chief Rich Sessler

If to Victorville: Victorville Fire Department
14343 Civic Drive, Victorville CA 92392
Attn: Interim Fire Chief Racowschi

Section 11. Miscellaneous Terms.

A. Representation and Warranties. The CITY and Victorville have all requisite power and authority to execute and perform this MOU. Each person executing this MOU warrants that he or she has the legal power, right, and authority to execute this MOU and bind his or her respective Party.

B. Governing Law. This MOU shall be governed by and construed in accordance with the laws of the State of California. Venue shall be in San Bernardino County.

C. Relationship of the Parties. Nothing contained in this MOU shall be construed as creating a joint venture, partnership, or any other similar arrangement between the Parties. No Party to this MOU shall be deemed to be a representative, an agent, or an employee of the other Party. Unless otherwise expressly specified in this MOU, no Party shall have any authority or right to assume or create any obligation of any kind or nature, express or implied, on behalf of, or in the name of, any other Party, nor bind any other Party in any respect, without the specific prior written authorization of the other Party.

D. Waiver. No Party shall be deemed to have waived any provision of this MOU unless such waiver is in writing and signed by such Party.

E. Legal Compliance. The Parties shall comply with all applicable Federal, State, and local laws and regulations related to the transactions set forth in, or referenced by, this MOU.

F. Third-Party Beneficiary. No claim as a third-party beneficiary under this MOU by any person, corporation, or any other entity, shall be made or be valid against Victorville or the CITY.

G. Headings. The section headings used in this MOU are for convenience only and shall not be deemed to limit, construe, affect or alter the meaning of this MOU.

H. Entire Agreement. This MOU constitutes the entire agreement between the Parties with respect to the matters contained herein, and shall supersede and replace any and all other prior understandings, correspondence, and agreements, oral or written, between the Parties with respect thereto. No change, amendment or modification of this MOU shall be valid or binding upon the Parties unless such change, amendment, or modification is in writing and duly executed by all Parties.

I. Assignment or Transfer. Neither Party shall assign, hypothecate, or transfer, either directly or by operation of law, this MOU or any interest herein without the prior written consent of the other Party. Any attempt to do so shall be null and void, and any assignees, hypothecates, or transferees shall acquire no right or interest by reason of such attempted assignment, hypothecation, or transfer.

J. Binding Effect. The terms of this MOU shall inure to the benefit of, and shall be binding upon, each of the Parties and their respective successors and assigns.

K. Severability. In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this MOU shall be declared invalid or unenforceable by a

valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this MOU which are hereby declared as severable, and shall be interpreted to carry out the intent of the Parties hereunder.

L. Cooperation: Further Acts. The Parties shall reasonably cooperate with one another and shall take any additional acts or sign any additional documents as may be necessary, appropriate, or convenient to attain the purposes of this MOU.

M. Counterparts. This MOU may be signed in counterparts, each of which shall constitute an original.

IN WITNESS WHEREOF, the Parties have executed this MOU for Equipment Sharing as of March 5, 2024.

City of Victorville

By: _____
Keith Metzler, City Manager

Date: _____

City of Redlands

By: _____
Eddie Tejeda, Mayor

Date: _____

ATTEST:

By: _____
Jeanne Donaldson, City Clerk

CONCUR:

By: _____
Richard Sessler, Fire Chief

City Council/Successor Agency Meeting **I. 5.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Approve the Memorandum of Understanding with the San Bernardino County Department of Public Health Environmental Health Services to provide Edible Food Recovery Inspection and Enforcement per Senate Bill1383 (Facilities and Community Services Director Crocker)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motion is provided:

I move to approve the Memorandum of Understanding with the San Bernardino County Department of Public Health Environmental Health Services for Edible Food Recovery Inspection and Enforcement.

RECOMMENDATION:

Staff recommends that the City Council approve a Memorandum of Understanding with San Bernardino County Department of Public Health Environmental Health Services for Senate Bill (SB) 1383 Edible Food Recovery Inspection and Enforcement compliance within the City of Redlands.

DISCUSSION:

California Senate Bill (SB) 1383 was enacted in 2016 and established methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants (SCLP). To reduce methane emissions from landfills, the bill established goals to reduce organic waste disposal 50% by 2020 and 75% by 2025 compared to 2014 levels; and recover at least 20% of currently disposed surplus food for human consumption by 2025. This bill required the California Department of Resources Recycling and Recovery (CalRecycle) to adopt regulations to achieve the targeted goals for reducing

organic waste disposal in landfills. The regulations took effect January 1, 2022.

The SB 1383 regulations are wide-ranging, imposing multiple requirements on local jurisdictions, haulers, waste generators, landfill operators and recycling facility operators. The regulations are also prescriptive, and contain specific requirements with which all jurisdictions must comply. This is in contrast with prior California solid waste laws and regulations that allowed jurisdictions to develop individual plans to meet state goals.

The following are some of the major obligations the SB 1383 regulations impose on the City and other covered jurisdictions:

- Adopt an enforceable ordinance by January 1, 2022, requiring organic waste generators, haulers, and other entities within the jurisdiction to comply with regulations.
- Implement programs to recover organic materials from all residential and commercial waste generators, including multifamily residential complexes.
- Implement a container contamination minimization program to monitor waste, recycle and organic container contents and reduce contamination. The program will include route reviews and/or waste evaluation as well as follow-up notifications to generators with violations.
- Implement outreach and education programs to notify generators about diversion program requirements.
- Implement edible food recovery (rescue) programs to divert surplus edible food to food banks for distribution to residents.
- Notify “Tier One” and “Tier Two” edible food generators (as defined in SB 1383 regulations) about requirements.
- Procure recovered organic waste products such as compost or mulch in quantity and quality that meets or exceeds the target specified by CalRecycle.
- Procure recycled paper products with at least 30% post-consumer recycled content.
- Implement compliance reviews for all commercial and multifamily generators with two or more cubic yards of solid waste (trash, organics and recycling combined) per week.
- Take enforcement actions including issuing Notices of Violations (which provides a period for generators to come into compliance) and ultimately assessing penalties via the administrative citation process, but only as of January 1, 2024.
- Maintain all implementation records in a central location that can be made available to CalRecycle within ten business days. The implementation records will include, but are not limited to, information about inspections, enforcement actions, outreach and education, program descriptions, procurement activities, edible food recovery programs, etc.

Current City Organics Recycling Programs:
SB 1383 regulations require all jurisdictions to adopt an enforceable ordinance to implement relevant provisions of the SB 1383 regulations. The City of Redlands adopted this required ordinance on October 18, 2022. Major provisions of the ordinance include:

- Organic material recycling requirements for single-family residential generators and commercial businesses (including multifamily dwellings);
- Requirement for all commercial waste generators to supply employees, contractors, tenants, and customers with organic waste collection services consistent with the City's collection programs;
- Requirements for businesses (except for multifamily premises) to supply indoor and outdoor recycling and organic containers when disposal containers are provided for customers for materials generated by that business;
- Requirements for businesses to educate and train employees on proper separation of waste and to label waste and recycling containers;
- Waivers of certain requirements for qualified generators (de minimis waiver for locations that generate less than the specified amounts of organic waste or a physical space waiver for locations that lack adequate space for containers);
- Edible food recovery requirements for commercial edible food generators and food recovery organizations and services;
- Procurement of recovered organic waste products;
- Record keeping, reporting and education/outreach requirements; and
- Inspection, investigation, review, and enforcement requirements.

The San Bernardino County Department of Public Health Environmental Health Services currently inspects commercial edible food generators, i.e., restaurants and grocery stores. City staff have discovered that county staff are open to including our SB 1383 edible food recovery inspection and enforcement of state-mandated requirements with their existing inspection procedures. This will include inspections, data collection, and maintenance, education, outreach, as well as possible enforcement actions, as detailed below.

The San Bernardino County, Department of Public Health, Environmental Health Services agrees to perform the services set below:

- Conduct education and outreach to City, Commercial Edible Food Generators, Food Recovery Organizations and Food Recovery Services regarding the requirements set forth by SB 1383, or County Ordinance 4434.
- Conduct inspections of Commercial Edible Food Generators to monitor compliance with County Ordinance 4434 requirements and to gather data for jurisdiction reporting purposes during inspections; and include:
    - Verify Commercial Edible Food Generators, Food Recovery Organizations and Food Recovery services arrange and maintain

contracts or written agreements outlining terms for edible food donation and acceptance.
    - Verify Commercial Edible Food Generators, Food Recovery Organizations, and Food Recovery Services keep records of types of foods that will be collected or self-hauled, the quantity of food per month, in pounds, that will be collected or self-hauled, and the established frequency.
    - Verify Commercial Edible Food Generators have established an employee edible food recovery training program and maintain records of employee training.
    - Verify that employees of Commercial Edible Food Generators directly involved in the Edible Food Recovery Program have a valid San Bernardino County food handler's card.
    - Verify Edible Food is capable of being recovered by a Food Recovery Organization or a Food Recovery Service is not intentionally spoiled.

- Obtain data from Food Recovery Organizations and Food Recovery Services during inspections of feeding sites or during regular communications, to determine the capacity to accept edible food donations.

    - Names, telephone numbers, and types of Food Recovery Organizations and Food Recovery Services within the jurisdiction.
        - Quantity, in pounds, of Edible Foods recovered from Commercial Edible Food Generators.
- Maintain up-to-date information collected by DEHS regarding Food Recovery Organizations, Food Recovery Services and Commercial Edible Food Generators within the City's jurisdiction and make it available upon request to help them meet applicable requirements of SB 1383.
- Conduct enforcement action to address non-compliance including, but not limited to, issuing Administrative Citations, Notice of Violation, fines, penalties, or other remedies available to the County.

These services will be effective upon approval of this MOU and continue through December 31, 2025.

ALTERNATIVES:

The City Council may elect not to approve the Memorandum of Understanding and direct staff accordingly.

STRATEGIC PLAN:

Supports Priority D - Sustainability.

SUBMITTED BY:
Tabitha Crocker, Facilities and Community Services Department Director

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Yvette M. Abich Garcia, City Attorney
Janice McConnell, Assistant City Manager
Christopher Boatman, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Nathalie Ayala, Senior Administrative Assistant

Fiscal Impact

Fiscal Year: FY 2023-24

Discussion:

There is no fiscal impact associated with the approval of the Memorandum of Understanding. City and County agree that all fees and revenue collected by the County for services performed hereunder, including the issuance of permits, the conducting of inspection and so forth, shall be retained by the County as payment for the services provided to City under the terms of the MOU. Fees shall be charged in accordance with the County Fee Ordinance, which shall be provided to the City.

Attachments

A. MOU Food Recovery

INSERT DOCUMENT SERIAL NUMBER

MEMORANDUM OF UNDERSTANDING
Between
San Bernardino County Department of Public Health Environmental Health Services
And
City of Redlands
For
Environmental Health Services

January 16, 2023

This Memorandum of Understanding (MOU) is made and entered into by and between San Bernardino County Department of Public Health, Environmental Health Services Division (County) and the City of Redlands (City).

This MOU addresses the procedures to be followed by the County and the City for the provision of environmental health services in the City's incorporated areas.

IT IS HEREBY AGREED AS FOLLOWS:

WHEREAS, The County desires to provide environmental health services in the areas designated below; and

WHEREAS, City desires the provision of environmental health services in the areas designated below; and

WHEREAS, County is qualified to provide the environmental health services designated below; and

WHEREAS, City desires that such services be provided by the County, and the County agrees to perform these services as set forth below;

NOW THEREFORE, County and City mutually agree to the following items and conditions:

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ATTACHMENT

ATTACHMENT A – Schedule of Services

I. DEFINITIONS

a. **COMMERCIAL EDIBLE FOOD GENERATOR**: Includes a Tier One or a Tier Two Commercial Edible Food Generator as defined in Section 33.1503 of County Ordinance 4434 or as otherwise defined in 14 CCR Section 18982(a)(73) and (a)(74). For the purposes of this definition, Food Recovery Organizations and Food Recovery Services are not Commercial Edible Food Generators pursuant to 14 CCR Section 18982(a)(7).

b. **EDIBLE FOOD:** Food intended for human consumption and collected or received from a Tier One or Tier Two Commercial Edible Food Generator. For the purposes of County Ordinance 4434 or as otherwise defined in 14 CCR Section 18982(a)(18), "Edible Food" is not Solid Waste if it is recovered and not discarded. Nothing in County Ordinance 4434, or in 14 CCR, Division 7, Chapter 12 requires or authorizes the Recovery of Edible Food that does not meet the food safety requirements of the California Retail Food Code.

c. **EDIBLE FOOD RECOVERY**: Actions to collect, receive, and/or redistribute Edible Food for human consumption from Tier One and Tier Two Commercial Edible Food Generators that otherwise would be disposed.

d. **ENFORCEMENT ACTION:** An action of San Bernardino County, Department of Public Health, Division of Environmental Health Services (DEHS) or its Enforcement Officers to address non- compliance with County Ordinance 4434 including, but not limited to, issuing administrative citations, fines, penalties, or using other remedies.

e. **FOOD DISTRIBUTOR**: A company that distributes food to entities including, but not limited to, supermarkets and grocery stores.

f. **FOOD FACILITY:** An operation that stores, prepares, packages, serves, vends, or otherwise provides food for human consumption at the retail level.

g. **FOOD RECOVERY:** Actions to collect and distribute food for human consumption that otherwise would be disposed, or as otherwise defined in 14 CCR Section 18982(a)(24).

h. **FOOD RECOVERY ORGANIZATION**: An entity that engages in the collection or receipt of Edible Food from Commercial Edible Food Generators and distributes that Edible Food to the public for Food Recovery either directly or through other entities, including, but not limited to:
   1. A food bank as defined in Section 113783 of the Health and Safety Code, which is:
      (a) A nonprofit charitable organization as defined in Section 113841 of the Health and Safety code, and
      (b) A nonprofit charitable temporary food facility as defined in Section 113842 of the Health and Safety Code.
   2. A Food Recovery Organization is not a Commercial Edible Food Generator for the purposes of this County Ordinance and implementation of 14 CCR, Division 7, Chapter 12 pursuant to 14 CCR Section 18982(a)(7).

i. **FOOD RECOVERY SERVICE:** A Person or entity that collects and transports Edible Food from a Commercial Edible Food Generator to a Food Recovery Organization or other entities for Food Recovery. A Food Recovery Service is not a Commercial Edible Food Generator for the purposes of County Ordinance 4434 and implementation of 14 CCR, Division 7, Chapter

12 pursuant to 14 CCR Section 18982(a)(7).

j. **INSPECTION:** For the purposes of Edible Food Recovery, actions to review contracts and other records related to the recovery of Edible Food and may occur off-site via email and other forms of electronic communication, as well as the on-site review of an entity's records and collection, handling, and other procedures for the recovery of Edible Food to determine if the entity is complying with the requirements of County Ordinance 4434.

II. COUNTY RESPONSIBILITIES

A. The County offers the following services to incorporated cities. The County will provide to the City those specific services selected from this list and as set forth in San Bernardino County Code Title 3, Division 15, County Ordinance 4434, as provided in the Schedule of Services (Attachment A).

1. Conduct inspections of Commercial Edible Food Generators to monitor compliance with SB 1383 requirements and to gather data for jurisdiction reporting purposes during inspections.

2. Gather data from Food Recovery Organizations and Food Recovery Services during inspections of feeding sites or during regular communications, to determine the capacity to accept edible food donations.

3. Maintain up-to-date information available to the City regarding Food Recovery Organizations, Food Recovery Services and Commercial Edible Food Generators within its jurisdiction upon request.

4. Conduct education and outreach to City, Commercial Edible Food Generators, Food Recovery Organizations and Food Recovery Services regarding the requirements set forth by SB 1383.

5. Conduct enforcement action to address non-compliance including, but not limited to, issuing administrative citations, notice of violation, fines, penalties, or using other remedies.

B. During the term of this MOU, the County Enforcement Officers and their deputies shall exercise the same powers and duties, including methods of enforcement, within the jurisdiction of the City as are conferred upon such officers by law as County officers. The County officers and their deputies shall enforce all provisions of the County Code relating to those services provided.

C. For purposes of this MOU, the jurisdiction of the City encompasses only the incorporated areas of the City and does not extend to spheres of influence.

III. CITY RESPONSIBILITIES

Compensate County as provided in Fiscal Provisions (Section V).

IV. MUTUAL RESPONSIBILITIES

A. In the performance of this MOU, County, its agents and employees, shall act in an independent capacity and not as officers, employees, or agents of this City.

B. Indemnification

1. The City agrees to indemnify, defend, and hold harmless the County and its officers, employees, agents, and volunteers from any and all claims, actions, losses, damages, and/or liability arising out of its negligent acts or omissions in performing its obligations under this MOU.
2. The County agrees to indemnify and hold harmless the City, its officers, agents, and volunteers from any and all claims, actions or losses, damages and/or liability resulting from the County's negligent acts or omissions in performing its obligations under this MOU.
3. In the event the County and City are found to be comparatively at fault for any claim, action, loss, or damage which results from their respective obligations under this MOU, the County and City shall each indemnify the other to the extent of its comparative fault or negligence.

C. Insurance

1. County and City are authorized self-insured public entities for purposes of Professional Liability, General Liability, Automobile Liability, and Worker's Compensation and warrant that through their respective programs of self-insurance, they have adequate coverage or resources to protect against liabilities arising out of the performance of the terms and conditions of this MOU.
2. The City shall require the carriers of required coverages to waive all rights of subrogation against the County, its officers, employees, agents, volunteers, contractors, and subcontractors. All general or auto liability insurance coverage provided shall not prohibit the City or the City's employees or agents from waiving the right of subrogation prior to a loss or claim. The City hereby waives all rights of subrogation against the County.
3. Any and all deductibles or self-insured retentions in excess of $10,000 shall be declared to, and approved by, County's Risk Management.

D. In the event of any dispute hereunder, each Party to this MOU shall bear its own attorney's fees and costs regardless of who prevails in the outcome of the dispute.

V. FISCAL PROVISIONS

A. City and County agree that all fees and revenue collected by the County for services performed hereunder, including the issuance of permits, the conducting of inspections and so forth, shall be retained by the County as payment for the services provided to City under the terms of this MOU. Fees shall be charged in accordance with the County Fee Ordinance, which may be amended from time to time. The current County Fee Ordinance shall be provided to City.

B. Any additional services requested by City to be performed by County shall be performed at an additional cost and in a manner mutually agreed upon by the City and County prior to the rendering of services. City shall reimburse County for additional services at the hourly rate prescribed in the County Fee Ordinance for such category of services.

VI. TERM

This MOU shall be effective upon execution by all parties and terminate on December 31, 2025.

VII. EARLY TERMINATION

This MOU may be terminated without cause by either party by serving a written notice to the other party thirty (30) days in advance of termination. The Director of Public Health is authorized to exercise the County's rights with respect to any termination of this MOU.

VIII. GENERAL PROVISIONS

A. When notices are required to be given pursuant to this MOU, the notices shall be in writing and mailed to the following respective addresses listed below.

City: City of Redlands
35 Cajon Street
P.O Box 3005
Redlands, CA 92373

County: San Bernardino County
Environmental Health Services
385 N. Arrowhead Avenue 2nd floor
San Bernardino, CA 92415-0160

B. Any alternations, variations, modifications, or waivers of provisions of the MOU, unless specifically allowed in the MOU, shall be valid only when they have been reduced to writing, duly signed and approved by the Authorized Representatives of both parties as an amendment to this MOU. No oral understanding or MOU not incorporated herein shall be binding on any of the Parties hereto.

IX. CONCLUSION

A. This MOU, consisting of six (6) pages and Attachment A, is the full and complete document describing services to be rendered by County to City, including all covenants, conditions, and benefits.

B. The signatures of the Parties affixed to this MOU affirm that they are duly authorized to commit and bind their respective institutions to the terms and conditions set forth in this document.

C. This MOU may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, and such counterparts shall together constitute one and the same MOU. The parties shall be entitled to sign and transmit an electronic signature of this MOU (whether by facsimile, PDF or other email transmission), which signature shall be binding on the party whose name is contained therein. Each party providing an electronic signature agrees to promptly execute and deliver to the other party an original signed Contract upon request.

SAN BERNARDINO COUNTY

►_____
Director of Public Health

By _____
(Authorized signature - sign in blue ink)

Dated: _____

Name Eddie Tejeda
(Print or type name of person signing contract)

Title Mayor
(Print or Type)

Dated: _____

Address 35 Cajon Street, PO Box 3005,
Redlands, CA 92373

Attachment A: Schedule of Services

The San Bernardino County, Department of Public Health, Environmental Health Services Division (County) agrees to perform these services as set forth below

1. Conduct education and outreach to City, Commercial Edible Food Generators, Food Recovery Organizations and Food Recovery Services regarding the requirements set forth by SB 1383, now County Ordinance 4434.
2. Conduct inspections of Commercial Edible Food Generators to monitor compliance with County Ordinance 4434 requirements and to gather data for jurisdiction reporting purposes during inspections.
    a. Verify Commercial Edible Food Generators, Food Recovery Organizations and Food recovery services arrange and maintain contracts or written agreements outlining terms for edible food donation and acceptance.
    b. Verify Commercial Edible Food Generators, Food Recovery Organizations, and Food Recovery Services keep records of types of foods that will be collected or self-hauled, the quantity of food per month, in pounds, that will be collected or self-hauled, and the established frequency.
    c. Verify Commercial Edible Food Generators have established an employee edible food recovery training program and maintain records of employee training.
    d. Verify employees of Commercial Edible Food Generators directly involved in the Edible Food Recovery Program have a valid San Bernardino County food handler's card.
    e. Verify Edible Food is capable of being recovered by a Food Recovery Organizations or a Food Recovery Service is not intentionally spoiled.
3. Obtain data from Food Recovery Organizations and Food Recovery Services during inspections of feeding sites or during regular communications, to determine the capacity to accept edible food donations.
    a. Names, telephone numbers, and types of Food Recovery Organizations and Food Recovery Services within the jurisdiction.
    b. Quantity, in pounds, of Edible Foods recovered from Commercial Edible Food Generators.
4. Maintain up-to-date information collected by DEHS regarding Food Recovery Organizations, Food Recovery Services and Commercial Edible Food Generators within the City's jurisdiction and make it available upon request to help them meet applicable requirements of SB1383.
5. Conduct enforcement action to address non-compliance including, but not limited to, issuing Administrative Citations, Notice of Violation, fines, penalties, or other remedies available to the County.

City Council/Successor Agency Meeting **I. 6.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Approve the request for commercial vendors and the temporary closure of a portion of 5th Street for the Stronger Together Now Giving Sunday event within Ed Hales Park on Sunday, March 31, 2024; approve a request for in-kind support in the amount of $1,969, and determine that the event is categorically exempt from environmental review pursuant to Section 15311 of the State's guidelines implementing the California Environmental Quality Act (Facilities and Community Services Director Crocker)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move that the City Council determine that this event is categorically exempt from environmental review pursuant to Section 15311 of the State's guidelines implementing the California Environmental Quality Act; and
2. I move to authorize and approve the request for commercial vendors and the temporary closure of a portion of 5th Street on March 31, 2024, and the in-kind support of $1,969.00 related to the Stronger Together Now Giving Sunday event.

RECOMMENDATION:

Staff recommends that the City Council direct staff accordingly related to the street closure request for a portion of 5th Street from 9:00 a.m. to 8:00 p.m. and the request for commercial vendors for the Giving Sunday event hosted by Stronger Together Now on March 31, 2024, within Ed Hales Park. Staff further recommends City Council direct staff accordingly concerning expenditure for the in kind support request.

DISCUSSION:

The Facilities and Community Services Department manages the administration and issuance of permits for special events held in public areas of the city. Upon issuing a special event permit, the event may take place contingent on the event organizer paying the required fees. However, the City recognizes the value of partnering with non-profit agencies and organizations to provide services beneficial to the community.

The non-profit organization, Stronger Together Now (STN), has hosted other events in Redlands and is requesting to hold the Giving Sunday event on March 31, 2024, at Ed Hales Park. The event will be held from 11:00 a.m. to 6:00 p.m. and includes 50 different food and commercial vendors. STN is also requesting a temporary street closure of 5th Street from E. State Street to the public parking lot entrance between the hours of 9:00 a.m. to 8:00 p.m for the location of the vendor booths and for the set-up and dismantling of the event. In addition to the commercial vendors, there will also be live music, kids' activities, service organizations and non-profit organizations participating in the event. STN is requesting in-kind support in the amount of $1,969 for departmental resources including personnel and equipment for the Facilities and Community Services Department.

City Councils' approval is required for the event as the municipal code prohibits commercial activity within city parks and does not permit special events to take place within a city street. Should the City Council elect to approve the event, the following requirements will apply. The event will be held within the park perimeter and along 5th Street between E. State Street and the public parking lot entrance. All commercial vendors shall have a current City of Redlands business license to participate in the event; and the event shall comply with all County of San Bernardino Health Permit regulations.

ALTERNATIVES:

The City Council may elect to deny the event.

STRATEGIC PLAN:

Priority A - Quality of Life, Strategic Objective 1. Beautification, Arts, and Culture. Enhance community events to better reflect Redlands' diversity and demographics.

SUBMITTED BY:
Tabitha Crocker, Facilities and Community Services Department Director

REVIEWED BY:
Charles M. Duggan Jr., City Manager
Janice McConnell, Assistant City Manager
Christopher Boatman, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Amber N. Davis, Administrative Assistant

Fiscal Impact

Fiscal Year: FY 2023/24

Amount: $1969.00

Discussion:

In anticipation of the City Council's consideration of this request, staff has compiled the following table outlining costs related to fees established by Resolution of the City Council and departmental charges pertaining to personnel and equipment resources necessary for the support of the event. The departmental charges are costs outside of normal city operations that would not be incurred by the City if the special event was not taking place.

Departmental Charges (Personnel & Equipment)	**March Event**	**Type**	**2024 Amount**
Police Personnel[1]	$0.00	Hard Cost	$0.00
Fire Personnel[1]	$0.00	Hard Cost	$0.00
Facilities & Community Services Personnel[1]	$1,871.00	Hard Cost	$3,750.00
Personnel & Equipment Subtotal	**$1,871.00**		**$3,750.00**
Fees Established by City Council Resolution			
Park Reservation	$98.00	Soft Cost	$188.00
FCS Equipment	$0.00	Soft Cost	$0.00
Fire Equipment	$0.00	Soft Cost	$0.00
Fees Subtotal			
Total Departmental Charges and Fees	**$1,969.00**		$3,938.00

	$1,871.00 (Hard) **$98.00** (Soft) **$1,969.00 (Total)**		**$3,750.00 (Hard) $188.00 (Soft) $3,938.00 (Total)**

[1]*Personnel costs are calculated conservatively assuming the highest staff cost scenario. Actual costs may vary on the day of the event based on the actual staff present. Actual costs will be confirmed following the event and will be included in a reconciliation report presented to the City Council.*

The following table summarizes the total estimated costs associated with the use of City resources and waiver of fees approved for events scheduled during Fiscal Year 2023-24 to date:

TABLE 2: FY 2023-24 Fee Waivers to date

Hard Costs	Soft Costs	Deposits Refunded	Waiver Amount	Net Amount
$220,365.14	$15,789.96	$	$236,155.10	$236,155.10

Attachments

STN Street Closure Form
STN In-Kind Form
Non-Profit Verification
STN Park Reservation
STN Giving Sunday Map

Event: STN Giving Sundays - March 2024

PERMIT TO CLOSE STREET FOR SOCIAL EVENT(S)

Permission to close a street for an event is subject to the following requirements:

1.	**Street Closure Diagram MUST be attached. (Failure to submit diagram will result in non-issuance of permit).**
2.	**Event Flyer or Event Description MUST be attached. (Failure to submit flyer or event description will result in non-issuance of permit).**
3.	**Applicant MUST provide insurance coverage per City's requirements (see reverse)**
4.	Written permission from all residents of the effected portion of the street MUST be attached.
5.	No tables or other objects shall be placed on the street surface.
6.	No alcohol shall be consumed on the street or City right-of-way outside of a permitted area.
7.	Temporary No Parking Signs and barricades shall be supplied and posted by City Staff
8.	Affected street(s) shall remain accessible for emergency vehicles and local traffic at all times.
9.	This permit pertains only to the closing of the street(s). This permit does not relate to the type of activity, noise, or any other aspect of the event. All other applicable and appropriate ordinances and laws apply.

Permission is hereby granted to: Stronger Together Now

To close (street names) 5th St

Between (street names) Ed Hales parking lot, 5th St entrance to State St

On (date) 12/19/23 from (time) 9:00 am to (time) 8:00 pm

Address of Applicant: 511 S University St Redlands, CA 92374

Signature of Applicant: _____ Phone No. 213-595-8735

Condition(s): Staff to setup and remove street closure

Event Description: STN Giving Sundays with artisan market, free market, communities focused activities/outreach

FOR OFFICE USE ONLY

This permit must be signed by the Chief of Police in order to be valid.

1. _____ _____
   Chief of Police — Date

2. _____ _____
   Municipal Utilities & Engineering Department — Date

3. _____ _____
   Facilities & Community Services Department — Date

4. _____ _____
   Risk Management Division — Date

Staff Notes:

City of Redlands *In-Kind Support Request*

Event Name: Giving Sundays Market

Event Date(s): 3/31/24 **Location(s):** Ed Hales Park

Rain Out Date: N/A **Beginning Time:** 1100 **End Time:** 1800

Describe Your Request:

This completed form with all supporting documentation shall be submitted a minimum of 60 days prior to the scheduled event. Additional information may be attached to this application form, as needed.

Requesting in-kind support for fees attributed to park reservation, staff, equipment for multiple Giving Sundays events. Giving Sundays is focused on supporting local, small businesses, artists and performers, as well as providing free market through local drives and donations. It will attract large crowds to the Redlands area with emphasis on collective care. We are requesting 5th St closure for our market.

Select and Describe All City Provided Services That May Apply to Your Request :

- [x] Traffic (*Personnel, equipment, cones, barricades, no-parking* — provide all; waive fees
- [ ] Police (*Public Safety Personnel)*
- [ ] Fire (*Paramedics, Inspectors)*
- [x] Parks *(Cleanup Personnel, Ball Field Lights)*
- [ ] Facility

Refuse/Recycling *(Event Receptacles, Roll-Off Service)* acquired by Event Organizers through Redlands Customer Service

Section 13.65 of the Redlands Municipal Code requires that events that serve more than 2,000 individuals per day will be required to submit for review and approval a Large Venue Recycling Plan. The Quality of Life Department may require smaller events to comply with City recycling practices as a condition of waiving fees.

- [x] Other — Event receptacles, electricity, port-a-potties, hand washing station

Group/Organization Name: Stronger Together Now

Is your Group/Organization a Registered Non-Profit: [x] Yes [ ] No **Non-Profit Federal Tax ID Number:** 86-3416186

Does your Group/Organization Presently Have Liability Insurance? [x] Yes [ ] No

Please be advised that depending upon your request, you may be required to provide proof of insurance coverage in an amount determined by the City and naming the City as an additional insured.

Has your Group/Organization received fee waivers from the City in the past? Yes for Giving Sundays 2023

Primary Contact Name & Title: Janelle Guerrero, Corporate Operating Officer (COO)

Mailing Address: 511 S University St Redlands, CA 92374

Phone Number: 213-595-8735 **E-Mail Address:** strongertogethernowie@gmail.com

As a part of our commitment to fiscal responsibility, the City of Redlands gathers data associated with the economic and social benefits associated with in-kind support. Please provide estimates, as applicable, for your event.

Positive outcomes for your organization from this

The purpose is to provide resources to the community, to serve as a unified and collective voice and represent the diverse lived experiences of the underserved and isoloated communites within the City of Redlands and surrounding cities in the IE. Giving Sundays enhances the city by encouraging diversity, equity and inclusion of all cultural backgrounds.

These events target issues related to the education, safety, personal and professional lives of all connected to the Redlands community. This event reestablishes a safe and comfortable space for diverse community members to feel a since of connection to the environment which in turn improves collective care.

Describe what economic benefit and impact this event will bring to the City:

Supports local, small businesses, artists and performers; brings large crowds to the Redlands area with support for underserved & isolated communities. Generates revenue to consequent businesses within the city, bringing new people to the area and supporting/amplifying cultural diversity in a positive way.

In April 2002, the City Council adopted Resolution No. 6038, which encourages groups or organizations requesting in-kind support from the City to use local businesses when procuring goods and services associated with the event. Receipts will need to be submitted through a follow up form. Failure to submit post event documentation (within 15 days) may affect future requests.

	Proposed Event	Previous Event Actuals	Vendors
Attendance: Redlands Residents	1500	2000	15-25
Attendance: Non-Residents	1500	1000	15-25
Food & Beverage Sales	tbd		10
Merchandise Sales	tbd		25
Ticket/Entrance Fees	none	none	n/a
Other			n/a
Total Revenue	tbd	$1200	tbd

I certify that all statements on this application are true and complete to the best of my knowledge.

Signature: [signature] **Title:** COO

Please Print Your Name: Janelle Guerrero **Date:** 9/30/23

To Be Completed by the City of Redlands

Date Received: **Received By:**

Notes:

City Manager Approval: City Council Approval:

Stronger Together Now

EIN: [redacted] | Rialto, California, United States

Publication 78 Data

Organizations eligible to receive tax-deductible charitable contributions. Users may rely on this list in determining deductibility of their contributions.

On Publication 78 Data List: Yes

Deductibility Code: PC

Determination Letter

A favorable determination letter is issued by the IRS if an organization meets the requirements for tax-exempt status under the Code section the organization applied.

Final Letter(s)

FinalLetter_86-3416186_STRONGERTOGETHERNOW_06152021_00.tif [https://apps.irs.gov/pub/epostcard/dl/FinalLetter_86-3416186_STRONGERTOGETHERNOW_06152021_00.tif]

Form 990-N (e-Postcard)

Organizations who have filed a 990-N (e-Postcard) annual electronic notice. Most small organizations that receive less than $50,000 fall into this category.

Tax Period:
2021 (01/01/2021-12/31/2021)

EIN:
[redacted]

Organization Name (Doing Business as):
STRONGER TOGETHER NOW

Mailing Address:

351 Chaparral Street
Rialto, CA 92376
United States

Principal Officer's Name and Address:

Janelle Guerrero

351 Chaparral Street
Rialto, CA 92376
United States

Gross receipts not greater than:
$50,000

Organization has terminated:
No

Website URL:

CITY OF REDLANDS – Facilities & Community Services Department
FORMAL PARK RESERVATION REQUEST

35 Cajon Street, Suite 222, P.O. Box 3005, Redlands CA 92373 (909) 798-7655 FAX (909) 335-6098
(Reservations taken year-round. No reservations made without fees/deposit paid and completion of form.)

Date/Time of Activity 3/31/24 Date/Time of Set-up 9-11am Estimated Attendance 1500

Requested Park: Brookside Community Crafton Brookside Ed Hales Ford
Jennie Davis Prospect Smiley Sylvan Texonia Other_____

Name of Organization/Individual Stronger Together Now; Janelle Guerrero

Address 511 S University St City Redlands State CA Zip 92374

Phone (W/H) 213-595-8735 (C) _____ (Email) strongertogethernowie@gmail.com

Nature of activity (describe in detail): Giving Sundays is a collaborative effort to bring a free-market and artisan market to the community, we rely on local drives to provide resources to surrounding underserved communities. We also provide resources locally to those in need.

Ed Hales park is Handicap accessible, has port-a-potties, hand-sanitizing station, electricity, lighting, trash bins & center stage that allows for direct engagement.

☐ **City Department** ☒ **Redlands Citizen** ☐ **Non-Citizen**

Type of Equipment Set-up by Event Coordinator(s)

__Tables Chairs EZ Ups Decorations Flowers____Food____Stereo____Porta Potty____Temporary Trash Bins____Electricity
____Other_____

Type of Vendor/Service

___Jumper___Caterer___Clown___Face painter_____Police_____Fire_____Other volunteers, staff, admin

Per Municipal Code 12.44.050 Outside sales are not allowed without express permission by the Quality of Life Director.
Per Municipal Code 12.44.190 No person shall cook or prepare on areas except for those specifically designated.
Per Municipal Code 5.04.090 All vendors are required to have a current business license with the City of Redlands.

Sylvan Park Picnic Areas

all **Section "A"** (select tables desired) _____ **Gazebo** Times: _____ am/pm to _____ am/pm Total Hours ___
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17

all **Section "C"** (select tables desired) _____ **Covered Picnic Area** Times: _ am/pm to _____ am/pm Total Hours ___
1 2 3 4 5 6 7

Application for Amplified Sound/Other Equipment

Type of amplification/other equipment mixer, dj controller, speakers, sub speakers, mics, amps

Nature of Use Entertainment, Communication with audience Time of day to be used 11am am/pm to 6pm

Chapter 12, Redlands Municipal Code

Applicant shall comply with all City laws governing use of Redlands parks. Applicant shall defend, indemnify and hold harmless the City and its respective officials, officers and employees from and against any and all claims, lawsuits, damages, losses, injuries, costs and liabilities for injury (including death) to persons or property arising from or associated with applicant's and applicant's officers', employees', agents' and invitees', negligent or intentionally wrongful acts or omissions in conducting applicant's activity allowed by the approved reservation request (Permit). Applicant Initial JMG

NOTE: This permit is subject to immediate cancellation by any Police Officer or agent of the City who determines that any provision(s) of the City's Municipal Code have been violated.

Applicant may be required to provide the City, for review and approval, certificates of insurance for public liability insurance to protect against loss from liability for damages on account of bodily injury and property damage arising from applicant's activity. Such insurance shall name on the policy or endorsement, as additional insureds, the City of Redlands and its respective elected officials, officers, employees and agents. Such insurance shall include not less than One Million Dollars ($1,000,000) per occurrence and Two Million Dollars ($2,000,000) in the aggregate of comprehensive general liability insurance, including bodily injury and property damage coverage, together with such other additional coverage as the City's Risk Manager may determine to be prudent. Insurance coverage shall be maintained for the duration of applicant's activity. Proof of Insurance Policy No. NPP 1605735 Insurance Company Shahinian insurance services, inc.

Signature of Applicant _____ Date 9/30/23

OFFICE USE ONLY

_ ____ Approved ____ Not Approved Authorized Signature _____ Date _____

Requirements: _____

CITY OF REDLANDS
FACILITIES & COMMUNITY SERVICES DEPARTMENT

PARK RESERVATION FEES

The following fees are established for reservations of parks and facilities and are paid by all users. All reservations/permits are for use by fifty or more persons

Redlands Bowl	$ 121.00	
Stage (outdoor area of Posellis only)	$ 20.00	per hour
Prosellis (includes stage area)	$ 25.00	per hour
Bowl	$ 25.00	per hour
Mandatory Park Attendant	$ 50.00	per hour
Avice Meeker Sewall Theatre	$ 121.00	
Apron (full stage not available)	$ 20.00	per hour
Mandatory Park Attendant	$ 50.00	per hour
Sylvan Park	$ 121.00	
Section A (Group Picnic) Tables 1 through 8 (seats 128)	$ 30.00	
Section A (Group Picnic) Tables 9 through 17 (seats 64)	$ 30.00	
Section A (Group Picnic) Tables 17 through 25 (seats 64)	$ 30.00	
Section C (Group Picnic) Tables 1 through 7 (seats 65)	$ 30.00	
Rose Garden	$ 25.00	
Covered Picnic Area (Shelter Area)	$ 40.00	
Gazebo	$ 40.00	
All Other Parks	$ 94.00	

Prospect Park Sign	$ 63.00

Clean-up Deposit (refundable)	
up to 50 persons	$ 100.00
50 to 150 persons	$ 200.00
150 or more persons	$ 300.00

Per Resolution No. 8045 effective 12/03/2019

Park Rules and Information

1. All park facility reservations must be made a minimum of 7 working days in advance and must be accompanied by full payment. Reservations taken year round.
2. Groups of more than 50 persons must make reservations per City Ordinance.
3. No vehicles allowed on park grounds at any time under any circumstances this includes loading and unloading.
4. BBQ grills are first come, first serve. Users are responsible for cleaning.
5. Volleyball courts and baseball diamond on park grounds are available on first come first serve basis.
6. Pets must be restrained at all times while in park.
7. No horseshoe playing on grass. Pits are available on park grounds on first come, first serve basis.
8. In case of any problems call police at 798-7681 for assistance. STANDBY NUMBER **909-557-6635**
9. No refunds for inclement weather or no shows. If you wish to cancel prior to the reservation date, a 10% administrative fee will apply.
10. It is your responsibility to prove your reservation to police and other parties.
11. Pony rides, dunk tanks and erecting of tents or volleyball nets, or any equipment that would involve stakes into the ground are strictly prohibited.
12. Air jumps are not encouraged and require an insurance policy in the amount of $3,000,000 naming the City of Redlands as additional insured. Reservations/ permits are required regardless of number in group when bouncers are brought into the park.

Park Rules by Ordinance

(For complete text, see Redlands Municipal Code Chapter 12.44)

12.44.090 AMPLIFIED SOUND - PERMIT REQUIRED

It is unlawful for any person to install, use, and operate within a park a loudspeaker or any sound amplifying for the purposes of giving instructions, directions, talks, addresses, or lectures, or of transmitting music to any persons or assemblages of persons in a park, or in the vicinity thereof, except when installed, used, or operated in compliance with one of the following provisions: A. By authorized law enforcement or park and recreation personnel: or B. Under a reservation or permit issued by the Director, and when operated in accordance with terms of that reservation or permit.

12.44.100 AMPLIFIED SOUND - GRANT OR DENIAL OF PERMIT

A. In determining whether to grant or deny a permit, the Community Services Administrator shall be guided by the following considerations:

1. The extent to which sound may carry into private or residential areas of the City.
2. Any actual conflict with other scheduled park uses or events.
3. The necessity for careful and safe provision of electricity and the safety of individuals near such electrical sources.

B. The Director shall not deny a permit on the basis of any dislike for or disagreement with the content of any proposed talks, addresses, lectures, or musical presentations.

12.44.130 AMPLIFIED SOUND - REGULATION OF VOLUME

If, at any time, the Police Department determines that the sound produced by an amplified sound system in a park is unreasonably interfering with other persons using a park or with nearby residents in the comfortable and reasonable enjoyment of their premises, an officer shall request the person in charge of the assembly, or any other person appearing to be involved in the production of the sound, to immediately reduce the level thereof. If the sound is not reduced within five minutes to a reasonable level, the officer shall immediately contact the Parks Division standby person to curtail the power source.

12.44.140 FIREARMS, FIREWORKS AND TOY WEAPONS PROHIBITED

No person shall carry or discharge firearms, firecrackers, rockets, torpedoes, or other types of explosives, or carry or discharge any air gun, or pistol, or any sling shot or similar device, or any bows and arrows, or carry or use any object calculated to make a noise sufficient to disturb the peace or quiet of the park, or bring into any park any of the above objects or articles, and if such objects or articles are brought into any public park, the person or persons so bringing them in will be subject to having them taken away from his person by the proper authorities.

12.44.230 PERMIT REQUIRED TO SELL MERCHANDISE

No person shall sell or offer for sale any merchandise, article or thing, except by permit from the Director. Non-profit organizations may sell goods only if specially authorized by the Director upon the approval of the person using the facility at the time such non-profit group proposes to sell goods.

12.44.250 PARK HOURS

No person shall stay or remain in any public park between the hours of 9 p.m. and 6 a.m. of the following day without permission of the Director. The provisions of Sections 12.44.100 and 12.44.110 shall govern the granting or denial of such permission.

12.44.270 DRINKING OF ALCOHOLIC BEVERAGES

No person shall drink or consume any alcoholic beverages or liquors in any open area of any public park. A person may drink or consume alcoholic beverages or liquors in public parks only in enclosed public areas as defined by resolution of the City Council pursuant to a written permit from the Director. The enclosed area is comprised of those areas which have been approved for use and secured by a barrier, portable fence, screen or other materials approved by the City Council.

12.44.280 RESERVATION – RESPONSIBILITY

The Director shall be responsible for scheduling and controlling the use of parks, or portions thereof, for the maximum benefit and participation by interested persons or groups, both public and private. All reservable areas in Sylvan Park shall be subject to reservation according to the rules and regulations of the Park Division. Activities sponsored by the Parks Division or Recreation Department shall be given preference in the use of City parks.

12.44.320 RESERVATIONS - FORMAL PERMIT – CONDITIONS

The Director may impose such reasonable conditions upon the issuance of the formal permit as he deems necessary for the protection of the public health, safety, and welfare, including, without limitation, conditions related to time, place, frequency, duration, fees, consumption of alcoholic beverages, maximum attendance, parking restrictions, and placement of apparatus and equipment. Such conditions and fees shall be set forth in writing and delivered to persons applying for reservations at the time an application is requested.

12.44.390 INSURANCE

Any person or group holding an event requiring a permit under this Chapter within any City park shall provide evidence of current insurance with the City named as an additional insured insuring the City from any and all liability for injury to persons or property resulting from the activity. The minimum amount of such insurance shall be determined by the Risk Manager in his/her discretion. This section shall not apply to City sponsored activities.

12.52.130 ABUSE OR MUTILATION OF PUBLIC TREES

Unless specifically authorized by the Parks Maintenance Superintendent, no person shall . . . allow any rope, wire, nails, advertising posters or other contrivance to be attached to any publicly owned tree.

City of
REDLANDS
Incorporated 1888

MANAGEMENT SERVICES
DEPARTMENT
Human Resources/
Risk Management Division

35 Cajon Street, Suite 200
P.O. Box 3005, Redlands, CA 92373
909-798-7514

JANICE McCONNELL
Assistant City Manager

TOMMI NG, PHR
Assistant Director, HR/Risk Management

Park Reservation/Special Events Permits

Insurance Requirements

The Special Event Holder shall secure and maintain the insurance coverage described below for the duration of the Event, and such insurance shall act as primary coverage with respect to any insurance or self-insurance programs maintained by the City.

Single Day Event- General Liability Insurance:

- One Million Dollars ($1,000,000.00) Per Occurrence
- The City of Redlands must be named as an Additional Insured and specify that the insurance is primary and non-contributing to any insurance maintained by the City
- Endorsements must be attached to the Certificate
- Event Name, Date, and Location should be noted in the Certificate's Description field

Liquor Liability Insurance: *Required if alcohol is being served or sold at the Event*

- One Million Dollars ($1,000,000.00) Per Occurrence
- The City of Redlands must be named as an Additional Insured

Multiple Day Event- General Liability Insurance:

- One Million Dollars ($1,000,000.00) Per Occurrence
- Two Million Dollars ($2,000,000.00) Aggregate
- The City of Redlands must be named as an Additional Insured and specify that the insurance is primary and non-contributing to any insurance maintained by the City
- Endorsements must be attached to the Certificate
- Event Name, Dates, and Location should be noted in the Certificate's Description field

Liquor Liability Insurance: *Required if alcohol is being served or sold at the Event*

- One Million Dollars ($1,000,000.00) Per Occurrence
- Two Million Dollars ($2,000,000.00) Aggregate
- The City of Redlands must be named as an Additional Insured

The Special Event Holder shall instruct their insurance agent/broker to furnish a properly executed Certificate of Insurance to the City's Risk Management Division for review of compliance with these requirements. Submission **MUST** be made at least **10 Days Prior to Event** to avoid Permit cancellation and total or partial loss of paid fees.

Prior written notice must be provided to the City for any modifications or cancellations to insurance Certificate

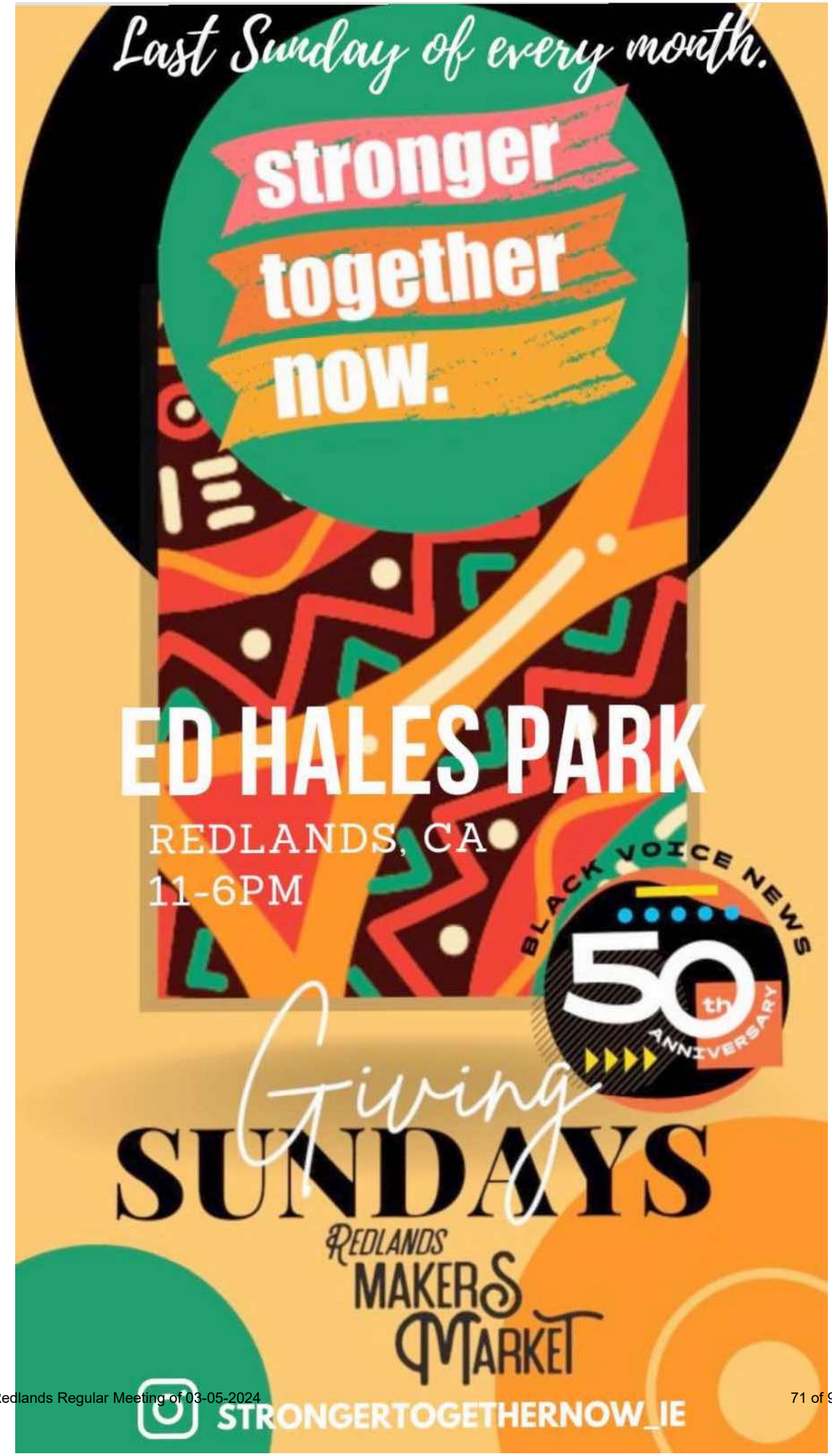
Submissions are requested to be sent by the agent/broker directly via email to sredinger@cityofredlands.org or via US Mail to:

Attn: SARAH REDINGER
City of Redlands
P.O. Box 3005
35 Cajon Street, Suite 200
Redlands, California 92373

City of REDLANDS "A CITY THAT WORKS"

MAJOR EXCLUSIONS
(Including, but not limited to)

- Automobile Liability
- Aircraft / Watercraft Liability
- Property Damage to Entity Premises
- Property of others in the Care, Custody and Control of the Insured
- Workers' Compensation
- Collapse of Tents and Concert Limitations
- Attendance Limitation Exclusion
- Outdoor Concerts Limitation Exclusion
- Seating, Glass & Fixtures Exclusion
- Pyrotechnics & Explosives Exclusion
- Exclude Specific Performances (without prior company approval)
- Bodily Injury, Property Damage, Personal Injury and Advertising Injury to any entertainer, stage hand, crew, independent contractor, audience member, patron or customer of the insured as a result of participating in a demonstration or show. Damage to property or equipment belonging to entertainer, stage hand, crew, independent contractor, audience member, patron or customer of the insured
- Punitive Damages
- Unmanned Aircraft
- Assault and Battery
- Terrorism
- Circus and Carnivals including Rides
- Mechanical Amusement Devices
- Motorized Sporting Events
- Tractor/Truck Pulls
- Boxing, Wrestling, Hockey, Contact Karate Events (including practice)
- Rodeos and Roping Events (including practice)
- Aircraft and Balloon Events
- Professional Sporting Events
- Pyrotechnical Uses / Fireworks Shows (does not apply to spectators)
- Heavy Metal, Alternative Music, Hip-Hop and Rap Concerts (without prior underwriter approval)
- Moonbounces, Jumphouses, and Trampolines
- Veterinary Legal Liability (NO animals)


Last Sunday of every month.
stronger
together
now.
ED HALES PARK
REDLANDS, CA
11-6PM
BLACK VOICE NEWS
50th ANNIVERSARY
Giving
SUNDAYS
REDLANDS
MAKERS
MARKET
STRONGERTOGETHERNOW_IE


Vendor types
Accessories/Jewelry
Bath & Beauty
Beverage
Clothing
Entertainment
Food - Dessert
Food - Main
Food - Main/Dessert
Food - Snack
Health & Beauty
Homegoods
Non Profit
Service - Funeral
N
0 10 20 Feet

City Council/Successor Agency Meeting **I. 7.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Approve a request for in-kind support in the amount of $112,769.88 related to the Redlands Bicycle Classic event hosted by the Redlands Bicycle Classic Inc. to be held on April 12, 2024, through April 14, 2024; authorize temporary street closures related to the event; authorize the sale and consumption of alcoholic beverages at the event; and determine that the sale and consumption of alcoholic beverages at the event is categorically exempt from environmental review pursuant to Section 15061 (b)(3) of the State's guidelines implementing the California Environmental Quality Act (Facilities and Community Services Director Crocker)

MOTION(S):

If City Council determines that staff's recommendation is appropriate, the following motions are provided:

1. I move that the City Council determine the authorization for the sale and consumption of alcoholic beverages during the Redlands Bicycle Classic to be held April 12 through April 14, 2024, is categorically exempt from environmental review pursuant to Section 15061 (b)(3) of the State's guidelines implementing the California Environmental Quality Act; and

2. I move to authorize and approve a request for in-kind support in the amount of $112,769.88 related to the Redlands Bicycle Classic event, the temporary street closures related to the event; and the sale and consumption of alcoholic beverages during the event.

RECOMMENDATION:

Staff recommends the City Council determine that the event, Redlands Bicycle Classic, is categorically exempt from environmental review pursuant to Section 15061 (b)(3) of the State's guidelines implementing the California Environmental Quality Act, that the City Council direct staff accordingly

concerning the request for in-kind support, and authorize the temporary street closures and the sale and consumption of alcoholic beverages during the Redlands Bicycle Classic event.

DISCUSSION:

The Facilities and Community Services Department manages the administration and issuance of permits for special events held in public areas of the City. Upon the issuance of a special event permit, the event may take place contingent on the event organizer paying the required fees. The City recognizes the value of partnering with non-profit agencies and organizations to provide services beneficial to the community. In an effort to provide support for programs that provide a community benefit, the City Council will, from time to time, consider the authorization of the expenditure of City resources related to a specific special event without reimbursement from Redlands-based non-profit agencies and organizations.

The Redlands Bicycle Classic Inc. (Bicycle Classic) is requesting in-kind support related to Police, Fire, and Facilities and Community Services personnel and the rental of barricades for the Bicycle Classic event to be held from April 12-14, 2024. The Bicycle Classic is a registered 501(c)(4) non-profit organization operating out of Redlands and has held the race and expo event locally for over 35 years. The current fee waiver request indicates 45,000 anticipated participants and spectators. The application suggests a positive outcome for the Bicycle Classic as providing local service clubs and organizations an opportunity to raise funds for charity, bringing revenue to local businesses, and recognition to the City through the hosting of a top-tier event. The indicated economic benefit is the use of local hotels, restaurants, and stores by participants and spectators.

For the upcoming event scheduled from April 12 at 5:00 p.m. to April 14 at 8:00 p.m., vendors will be stationed on the upper level of the bi-level parking structure located on E. Citrus Ave, where the beer garden will also be located. To facilitate this event, various streets will experience intermittent closures throughout the day. A detailed map of these street closures is attached to this report for further reference and planning purposes.

The City Council has approved in-kind support requests for past annual events. A summary of the costs is included in the fiscal impact section of this report.

The sale and consumption of alcoholic beverages at the event is categorically exempt from the requirements of the California Environmental Quality Act’s guidelines pursuant to Section 15061 (b)(3). This section includes the permitting of existing public facilities involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. The request is consistent with this exemption as it includes permitting alcohol service within an

existing public park.

ALTERNATIVES:

The City Council may deny the request for in-kind support or provide alternative direction to staff.

STRATEGIC PLAN:
Supports Priority A - Quality of Life: Economic Vitality

SUBMITTED BY:
Tabitha Crocker, Director Facilities and Community Services Department

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:
Amber N. Davis, Administrative Assistant

Fiscal Impact

Fiscal Year: FY 2023/24

Amount: 112,769.88

Discussion:

In anticipation of the City Council's consideration of this request, staff has compiled the following table outlining costs related to fees established by Resolution of the City Council and departmental charges pertaining to personnel and equipment resources necessary for the support of the event. The departmental charges are costs outside of normal City operations that would not be incurred by the City if the special event was not taking place.

Departmental Charges (Personnel & Equipment)	**2024 Amount**	**Type**	**2023 Amount**
Police Personnel[1]	$81,030.00	Hard Cost	$70,072.00
Fire Personnel[1]	$19,082.88	Hard Cost	$19,960.00
Facilities & Community Services Personnel[1]	$2,112.00	Hard Cost	$2,112.00
Personnel & Equipment Subtotal	**$102,224.88**		**$91,874.00**

Fees Established by City Council Resolution			
Park Reservation	$0.00	Soft Cost	$0.00
FCS Equipment	$945.00	Soft Cost	$250.00
Fire Equipment	$9,600.00	Soft Cost	$400.00
Fees Subtotal	$0.00		$0.00
Total Departmental Charges and Fees	**$10,545.00**		$**650.00**
	$** 102,224.00(hard) **$ 10,545.00(soft) **$ 112,769.88**		**$91,874.00** **$650.00** **$92,524.00**

[1]Personnel costs are calculated conservatively assuming the highest staff cost scenario. Actual costs may vary on the day of the event based on the actual staff present. Actual costs will be confirmed following the event and will be included in a reconciliation report presented to the City Council.

The following table summarizes the total estimated costs associated with the use of City resources and waiver of fees approved for events scheduled during Fiscal Year 2022-23 to date:

TABLE 2: FY 2023-24 Fee Waivers to date

Hard Costs	Soft Costs	Deposits Refunded	Waiver Amount	Net Amount
$220,365.14	$15,789.96	$	$236,155.10	$236,155.10

Attachments

Street Closure Request
RBC Letter to Council
In-Kind Support Request
ABC Permit Request
Non-Profit Verification Letter

Event: Redlands Bicycle Classic

PERMIT TO CLOSE STREET FOR SOCIAL EVENT(S)

Permission to close a street for an event is subject to the following requirements:

1.	**Street Closure Diagram MUST be attached. (Failure to submit diagram will result in non-issuance of permit).**
2.	**Event Flyer or Event Description MUST be attached. (Failure to submit flyer or event description will result in non-issuance of permit).**
3.	**Applicant MUST provide insurance coverage per City's requirements (see reverse)**
4.	Written permission from all residents of the effected portion of the street MUST be attached.
5.	No tables or other objects shall be placed on the street surface.
6.	No alcohol shall be consumed on the street or City right-of-way outside of a permitted area.
7.	Temporary No Parking Signs and barricades shall be supplied and posted by City Staff
8.	Affected street(s) shall remain accessible for emergency vehicles and local traffic at all times.
9.	This permit pertains only to the closing of the street(s). This permit does not relate to the type of activity, noise, or any other aspect of the event. All other applicable and appropriate ordinances and laws apply.

Permission is hereby granted to: Redlands Bicycle Classic

To close (street names) various streets per attached

Between (street names) various streets per attached

On (date) 4/12/24 from (time) 5pm am/pm to (time) 8pm am/pm on April 14, 2024

Address of Applicant: P.O. Box 7880 Redlands, CA 92375

Signature of Applicant: Marc Shi Phone No. 909-963-9099

Condition(s): All traffic and road closures to be coordinated with/by the Redlands Police Department

Event Description: Redlands Bicycle Classic / Professional bicycle race

FOR OFFICE USE ONLY

This permit must be signed by the Chief of Police in order to be valid.

1. _____ _____
   Chief of Police — Date

2. _____ _____
   Municipal Utilities & Engineering Department — Date

3. _____ _____
   Facilities & Community Services Department — Date

4. _____ _____
   Risk Management Division — Date

Staff Notes:

CITY OF REDLANDS
ONE STOP PERMIT CENTER

BARRICADE RENTAL

Name of Organization Redlands Bicycle Classic		Name of Contact Ed Purves	
Address P.O. Box 7880		Address Same	
City Redlands, CA 92375		City Same	
Phone (909) 963-9099	Alternate Phone	Phone (909) 208-5353	Alternate Phone
Date(s) needed From To 4/9/24-4/15/24		Location of Use Various locations	
Pickup from City Yard: Date 4/9/24 Time 4pm		Return to City Yard: Date 4/15/24 Time 9am	

Purpose of Use For use throughout Redlands during the 2024 Redlands Bicycle Classic.

1- Road Closed
1- Road Closed Ahead

Barricades

Barricades	EACH 300	days	$2.50/day/each	$
Date Paid			**Total Rental Fee Due**	$

Rules for use of City barricades.

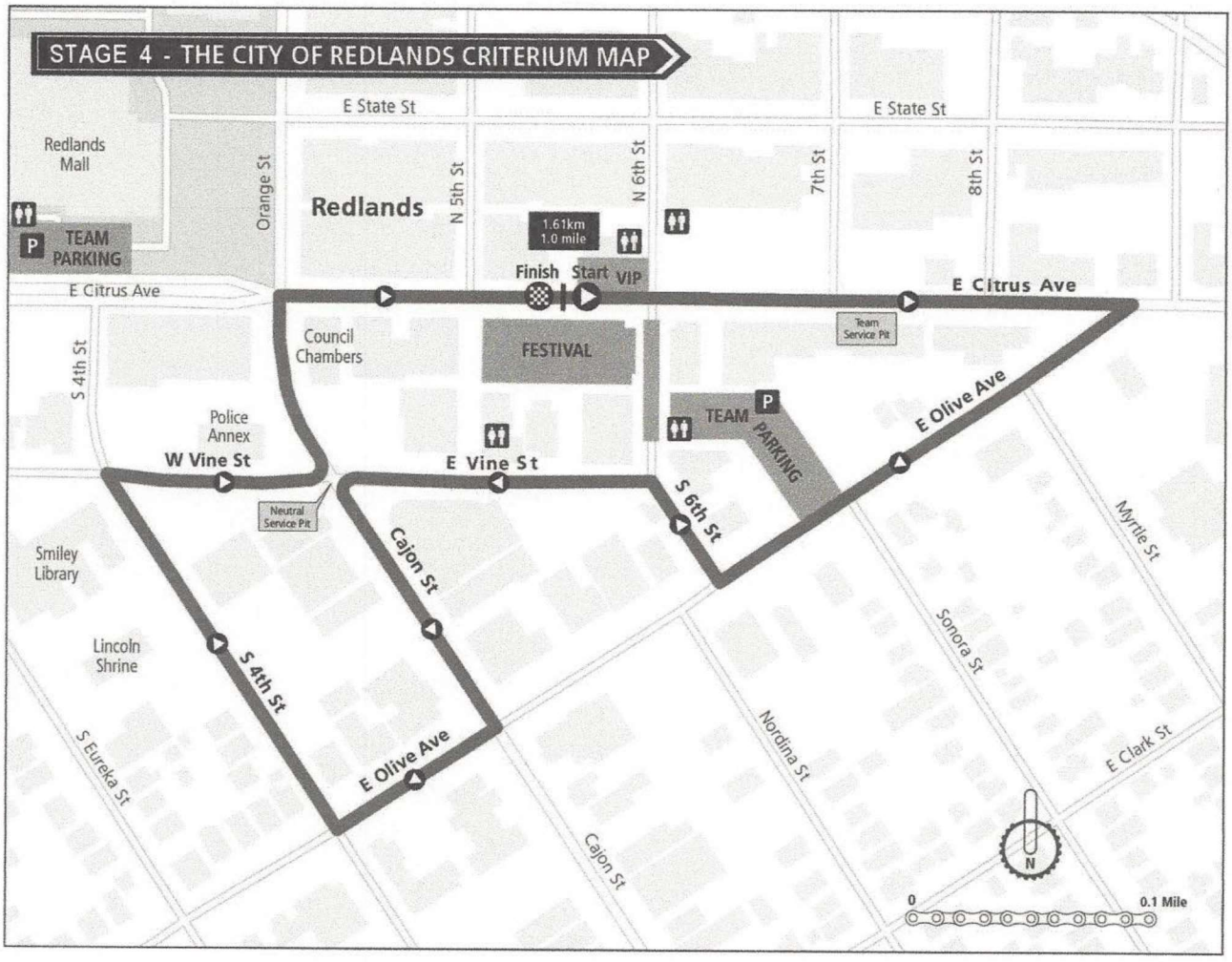
1. Barricades shall be rented only to recognized non-profit/civic groups located within the City of Redlands.
2. Barricades shall not be marked or altered in any way, no holes shall be drilled in materials.
3. Barricades shall be kept clean and free from dirt and debris, including tar, oil, paint, etc.
4. All items shall be returned in the condition as they were received. Barricades shall be stacked on pallets if taken from pallets.
5. The organization renting barricades shall be liable for the full replacement value of any and all materials lost or damaged.

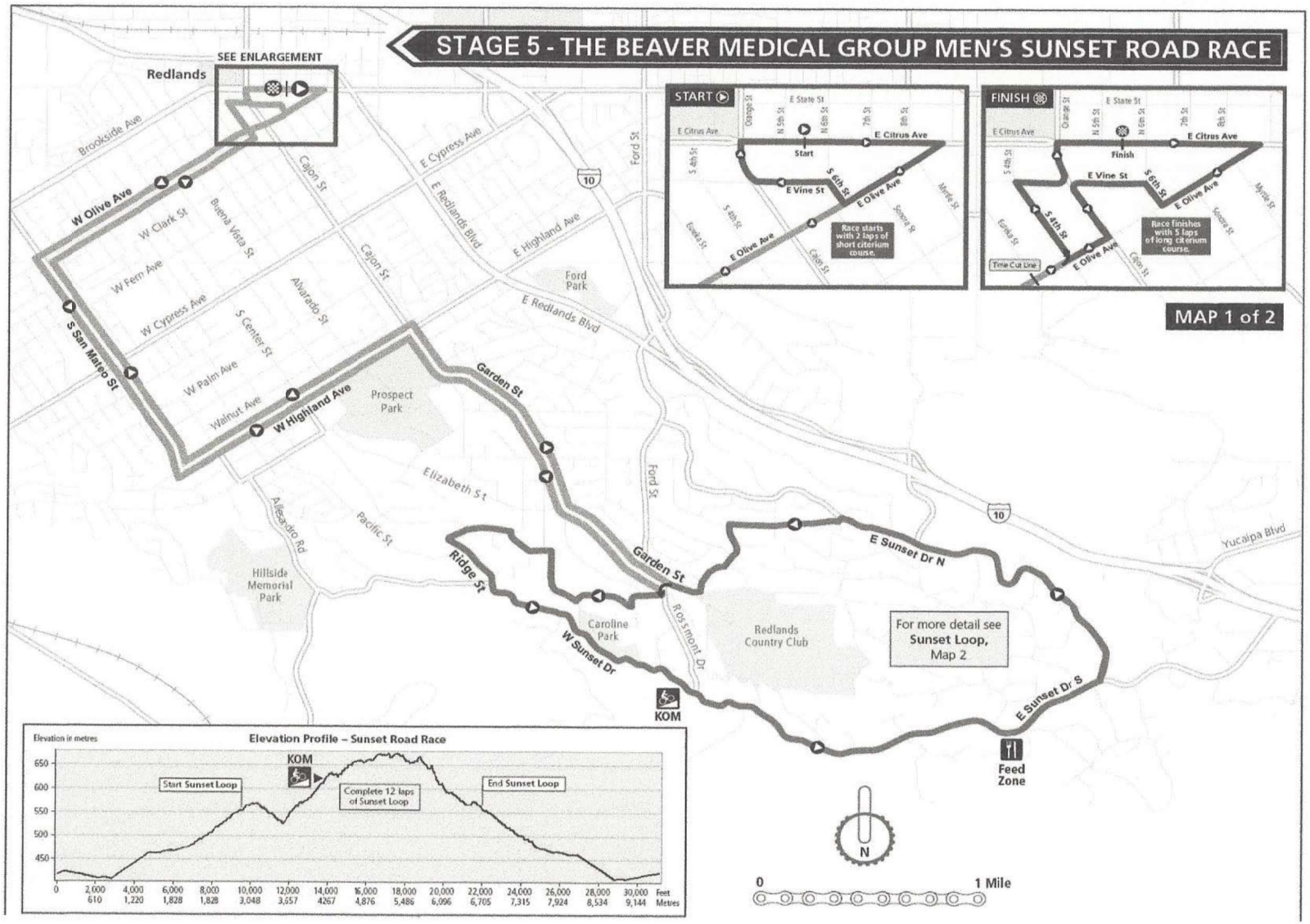
Barricades shall be picked up and returned to the Redlands City Yard, 1270 W. Park Avenue, Building M.

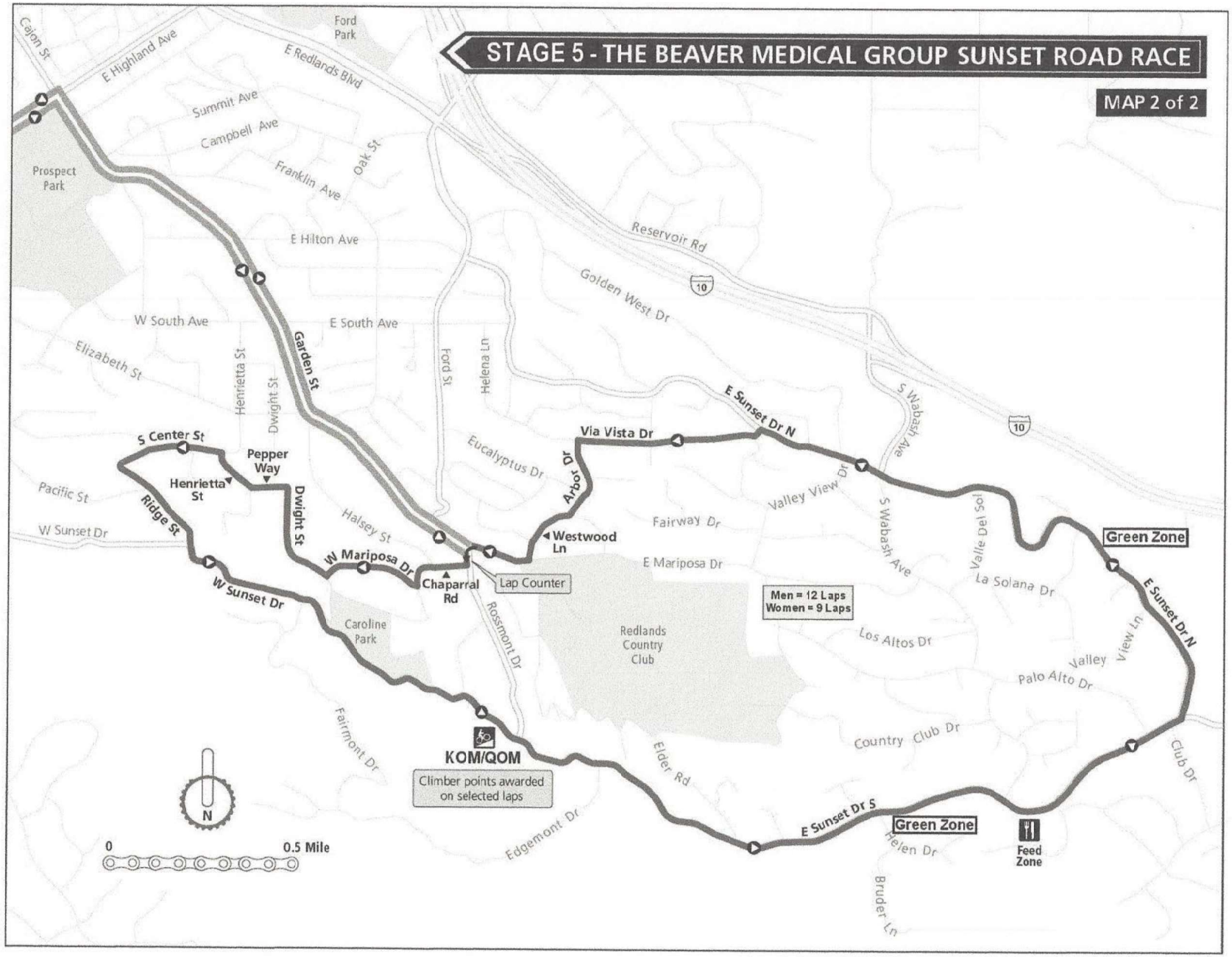
I am the duly authorized representative of the above-named organization. I have read and agree to the rules for the use of City barricades as herein stated.

Signed Marc Sb	Title Executive Director	Date 11/7/2023
Approved	Title	Date

Revised Jan 2012


STAGE 4 - THE CITY OF REDLANDS CRITERIUM MAP
E State St
E State St
Redlands Mall
Orange St
Redlands
N 5th St
N 6th St
7th St
8th St
TEAM PARKING
1.61km
1.0 mile
Finish
Start
VIP
E Citrus Ave
E Citrus Ave
Team Service Pit
Council Chambers
FESTIVAL
S 4th St
Police Annex
W Vine St
E Vine St
TEAM PARKING
E Olive Ave
S 6th St
Neutral Service Pit
Cajon St
Smiley Library
Lincoln Shrine
S 4th St
E Olive Ave
S Eureka St
Myrtle St
Sonora St
Nordina St
E Clark St
Cajon St
N
0
0.1 Mile


STAGE 5 - THE BEAVER MEDICAL GROUP MEN'S SUNSET ROAD RACE
SEE ENLARGEMENT
Redlands
START
FINISH
Start
Finish
Race starts with 2 laps of short criterium course.
Race finishes with 5 laps of long criterium course.
Time Cut Line
MAP 1 of 2
Brookside Ave
W Olive Ave
W Clark St
Buena Vista St
W Fern Ave
W Cypress Ave
S Center St
Alvarado St
S San Mateo St
W Palm Ave
Walnut Ave
W Highland Ave
Cajon St
E Cypress Ave
E Redlands Blvd
E Highland Ave
Ford St
Ford Park
Prospect Park
Garden St
Elizabeth St
Alessandro Rd
Pacific St
Hillside Memorial Park
Ridge St
Caroline Park
W Sunset Dr
Rossmont Dr
Redlands Country Club
E Sunset Dr N
E Sunset Dr S
Yucaipa Blvd
10
KOM
Feed Zone
For more detail see Sunset Loop, Map 2
Elevation Profile – Sunset Road Race
Elevation in metres
Start Sunset Loop
Complete 12 laps of Sunset Loop
End Sunset Loop
650
600
550
500
450
0
2,000 610
4,000 1,220
6,000 1,828
8,000 1,828
10,000 3,048
12,000 3,657
14,000 4267
16,000 4,876
18,000 5,486
20,000 6,096
22,000 6,705
24,000 7,315
26,000 7,924
28,000 8,534
30,000 9,144
Feet Metres
N
0
1 Mile


STAGE 5 - THE BEAVER MEDICAL GROUP SUNSET ROAD RACE
MAP 2 of 2
Cajon St
E Highland Ave
Ford Park
E Redlands Blvd
Summit Ave
Campbell Ave
Franklin Ave
Oak St
Prospect Park
E Hilton Ave
Reservoir Rd
Golden West Dr
W South Ave
E South Ave
Elizabeth St
Henrietta St
Dwight St
Garden St
Ford St
Helena Ln
S Center St
Pepper Way
Henrietta St
Pacific St
Ridge St
W Sunset Dr
Dwight St
Halsey St
W Mariposa Dr
Chaparral Rd
Lap Counter
Eucalyptus Dr
Arbor Dr
Via Vista Dr
E Sunset Dr N
S Wabash Ave
Valley View Dr
Fairway Dr
Westwood Ln
E Mariposa Dr
Valle Del Sol
La Solana Dr
Green Zone
E Sunset Dr N
Men = 12 Laps
Women = 9 Laps
Los Altos Dr
Valley View Ln
Palo Alto Dr
Country Club Dr
Club Dr
Caroline Park
Rossmont Dr
Redlands Country Club
Fairmont Dr
KOM/QOM
Climber points awarded on selected laps
Elder Rd
E Sunset Dr S
Green Zone
Feed Zone
Helen Dr
Bruder Ln
Edgemont Dr
N
0
0.5 Mile

City of Redlands
P. O. Box 3005
Redlands, CA 92373

Dear Elected Officials and City Staff:

On behalf of the Redlands Bicycle Classic Committee, we are excited to approach the City of Redlands with our intent to conduct the Redlands Bicycle Classic from April 10-14, 2024. In 2023, the Redlands Bicycle Classic remained a flagship community event for the city. We remain committed to hosting this nationally renowned cycling competition and community event in a safe and responsible manner, while bringing recognition and revenue to our city. In exchange, we are soliciting the in-kind support of the City's leadership through their waiver of the costs and fees associated with our event.

We fully understand and support the City Council's focus on fiscal responsibility. With that, we remain confident that you will continue to see that the value of the Redlands Bicycle Classic far exceeds the costs incurred. We applaud the Council for seeing past the initial costs on paper and recognizing the true value of investing in community events that make Redlands the jewel of the Inland Empire and a place we are all proud to call home. In terms of value, we realize it is very difficult to quantify a specific dollar amount associated with many of the benefits this event provides. However, I would like to take a moment to share the following perspective on what the Redlands Bicycle Classic means to our community.

Value to the City of Redlands

The positive exposure to the city is extensive and difficult to measure. Marketing of the Redlands Bicycle Classic translates into marketing the City of Redlands. Our in-kind media sponsor partnerships include a large cross section of all media capacities and our message reaches hundreds of thousands of viewers, with total media impressions in the millions. Our partnerships with twelve inland area radio stations and local news groups, including our sponsor, the Redlands Community News, focus on inviting spectators to come to Redlands to enjoy our famous hospitality, while watching an exciting world-class event and inviting them to patronize our local hotels, restaurants, and stores. The Redlands Bicycle Classic is well known throughout the media circles, and it is a "must cover" event. We have worked diligently to increase the exposure for the City of Redlands through the Classic. In 2023, we partnered with the video production team at San Bernardino Valley College. They produced an exceptional three minute video highlighting the event, which is on our website.

Value to local businesses

As recognized by the Redlands Chamber of Commerce and several local businesses that sponsor the Classic, many Redlands businesses benefit from the participants, their families and spectators who travel here from out of the area. Whether they are staying in their hotels, dining in their restaurants, purchasing fuel, or shopping in their stores, Redlands businesses enjoy an uptick in business when the Classic comes to town.

Value to the community

In addition to providing the United States with a top-notch professional cycling event, the Redlands Bicycle Classic provides so much more. We offer the opportunity for people of all ages to experience the thrill of an exceptionally organized event. Whether you are three or eighty-three, you can race in the Classic. Our public races showcase future cycling talent and encourage positive activities and healthy living for our youth. In 2023, we partnered once again with the "Plain Wrap Ride" to bring another cycling event downtown and over 400 people attended. We also added a running event. Although the first year saw light attendance, we are hoping for increased participation this year.

We will also continue our "School Duel" public races, encouraging children to get out and ride. Through participation in the "Fit Lifestyle" quiz, any child completing the online "quiz" will have the ability to participate in the public races free of charge. Our school visit program allowed professional cycling teams to conduct over 30 presentations and visit over 10,000 children in 2023.

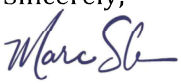
Finally, the Redlands Bicycle Classic has become a tradition for many local service clubs and non-profit groups. Our Expo area, now called the Vendor Village, located atop the parking structure, affords groups an opportunity to raise funds for their various causes through sales of food, beverage, and other items. In 2023, the number of vendors was amazing, and we needed overflow booth space in adjacent areas. The attendance on Saturday and Sunday was fantastic. With the addition of live entertainment on Saturday and a cornhole tournament on Sunday, there was something for everyone, even those with a limited interest in cycling.

I know the Council is very familiar with the approach our group takes towards fiscal responsibility and reducing costs to the City. We have worked diligently with each of the city departments to minimize the impact the event has on their operations. We provide Race Marshals to reduce traffic control expenses by the Police Department. We provide doctors from Loma Linda Medical Center to lessen the impact on the Fire Department. Our volunteers pick up and return signs, barricades, and cones to reduce costs for the Quality of Life Department.

In a community already rich with tradition and history, it is tough to find an event that adds value. However, the Classic has consistently met this challenge for the past 37 years, and Redlands can be proud to claim the Bicycle Classic. Racers and teams throughout the country simply refer to the event as "Redlands." As one of the premier stage races in North America, please make no mistake about it – your support of the Redlands Bicycle Classic over the past 37 years has been nothing short of extraordinary.

As we embark upon the 38th edition of this event, your support and investment are key in the continued success of the Redlands Bicycle Classic. We feel strongly that the Classic is a part of what makes Redlands special, and we are very proud to be a part of making this community a wonderful place to call home. In closing, on behalf of the over community 500 volunteers that make up our team, I thank you for your continued support and look forward making YOUR Redlands Bicycle Classic a success in 2024.

Sincerely,



Marc Shaw, Executive Director
Redlands Bicycle Classic, Inc.

City of Redlands *In-Kind Support Request*

Event Name: Redlands Bicycle Classic, Inc

Event Date(s): April 12-14, 2024 **Location(s):** Various locations (downtown, Sunset, etc)

Rain Out Date: None **Beginning Time:** 1700-April 12 **End Time:** 2100-April 14

Describe Your Request:

This completed form with all supporting documentation shall be submitted a minimum of 60 days prior to the scheduled event. Additional information may be attached to this application form, as needed.

The all volunteer board of the Redlands Bicycle Classic Committee respectfully requests city fees be supported in-kind for the 2024 Redlands Bicycle Classic. Please refer to the attached letter for specific information.

Select and Describe All City Provided Services That May Apply to Your Request :

- [x] Traffic (*Personnel, equipment, cones, barricades, no-parking* — 100 cones, 300 barricades, 15 signs
- [x] Police (*Public Safety Personnel*) — Friday (5), Saturday (6), Sunday (15) plus volunteers
- [x] Fire (*Paramedics, Inspectors*) — Paramedics - Saturday (2) and Sunday (2). RBC will provide medical race staff.
- [ ] Parks (*Cleanup Personnel, Ball Field Lights*)
- [x] Facility — Parking structure located on Citrus Avenue between 5th and 6th street.

Refuse/Recycling (*Event Receptacles, Roll-Off Service*) acquired by Event Organizers through Redlands Customer Service

Section 13.65 of the Redlands Municipal Code requires that events that serve more than 2,000 individuals per day will be required to submit for review and approval a Large Venue Recycling Plan. The Quality of Life Department may require smaller events to comply with City recycling practices as a condition of waiving fees.

- [x] Other — Use of city Showmobile stage from April 10-14.

Group/Organization Name: Redlands Bicycle Classic, Inc

Is your Group/Organization a Registered Non-Profit: [x] Yes [ ] No **Non-Profit Federal Tax ID Number:** REDACTED

Does your Group/Organization Presently Have Liability Insurance? [x] Yes [ ] No

Please be advised that depending upon your request, you may be required to provide proof of insurance coverage in an amount determined by the City and naming the City as an additional insured.

Has your Group/Organization received fee waivers from the City in the past? Yes

Primary Contact Name & Title: Marc Shaw, Executive Director

Mailing Address: P.O. Box 7880 Redlands, CA 92375

Phone Number: (909) 963-9099 **E-Mail Address:** mshaw@redlandsclassic.com

As a part of our commitment to fiscal responsibility, the City of Redlands gathers data associated with the economic and social benefits associated with in-kind support. Please provide estimates, as applicable, for your event.

Positive outcomes for your organization from this	This event provides local service clubs and organizations with an opportunity to raise funds for charity and brings revenue to local businesses and the city. The event also brings recognition to the city through its hosting of a world-renowned event.
Describe what economic benefit and impact this event will bring to the City:	With approximately 35,000 attendees, local businesses will see an increase in revenue. Spectators and participants will shop in local stores, dine in local restaurants and spend money throughout the city.

In April 2002, the City Council adopted Resolution No. 6038, which encourages groups or organizations requesting in-kind support from the City to use local businesses when procuring goods and services associated with the event. Receipts will need to be submitted through a follow up form. Failure to submit post event documentation (within 15 days) may affect future requests.

	Proposed Event	Previous Event Actuals	Vendors
Attendance: Redlands Residents	35,000	35,000	150
Attendance: Non-Residents	10,000	10,000	50
Food & Beverage Sales	N/A	N/A	$25,000 to service clubs
Merchandise Sales	$7,500	$6,000	$10,000+
Ticket/Entrance Fees	Free to spectators	Free to spectators	Expo rental fees - $10,000
Other	N/A	N/A	N/A
Total Revenue	All funds are used	for future year's event.	$35,000

I certify that all statements on this application are true and complete to the best of my knowledge.

Signature: Marc Sh **Title:** Executive Director

Please Print Your Name: Marc Shaw **Date:** 11/7/2023

To Be Completed by the City of Redlands

Date Received: **Received By:**

Notes:

City Manager Approval: City Council Approval:

CITY OF REDLANDS
APPLICATION REQUESTING AUTHORIZATION TO SERVE ALCOHOL

TYPE/NAME OF EVENT: Redlands Bicycle Classic - Expo

DATE OF EVENT: 13 April 2024 & 14 April 2024 HOURS: 15th: 8:30am - 7:00pm / 16th: 9am - 5pm

LOCATION: Redlands City Hall Parking Structure @ 6th and Citrus - Top Deck

APPLICANT'S INFORMATION:

INDIVIDUAL/ORGANIZATION NAME: Redlands Sunrise Rotary Club

CONTACT PERSON: Jonathan Shidler PHONE: 909.496.7508

EMAIL: Jonathan.Shidler@JonathanShidler.com ADDRESS: 411 Cajon, Redlands, CA 92373

EVENT INFORMATION:

ARE FEES BEING CHARGED FOR EVENT? YES ☐ NO ☑ PRICE: _____

ARE FEES BEING CHARGED FOR ALCOHOL? YES ☑ NO ☐ PRICE: $8.00/Pint | $12.00 - 14.00 per wine / specialty serving

TYPE OF ALCOHOL BEING SERVED: BEER ☑ WINE ☑ DISTILLED SPIRITS ☐

RELEASE, HOLD HARMLESS AND AGREEMENT NOT TO SUE

I, the undersigned, representing Redlands Sunrise Rotary Club and in consideration of being permitted to conduct the Event, agree that the members/participants of Redlands Sunrise Rotary Club shall defend, indemnify and hold harmless the City of Redlands, its elected officials, officers, boards, commissions, agents and employees from and against any and all claims, demands, actions, suits, damages, liabilities and judgments of every kind and nature and regardless of the merit of the same, arising out of the use of City of Redlands' facilities.

The members/participants of Redlands Sunrise Rotary Club hereby release, discharge and agree not to sue the City of Redlands for any injury, death or damages to or loss of property arising out of or in connection with this event from whatever cause.

I HAVE CAREFULLY READ THIS RELEASE, HOLD HARMLESS AND AGREEMENT NOT TO USE AND FULLY UNDERSTAND ITS CONTENTS. I REPRESENT I HAVE THE FULL AUTHORITY TO EXECUTE THIS FULL RELEASE OF LIABILITY ON BEHALF OF THE MEMBERS/PARTICIPANTS OF Redlands Sunrise Rotary Club AND THAT I HAVE SIGNED THIS AGREEMENT ON:

Date: 10 January 2024 Signature: _____

AUTHORIZATION

Pursuant to the use of alcohol within the City property noted above, the City of Redlands grants you permission to do so with the following conditions set forth by the City Council:

ALCOHOL RELATED TO PARKS:

Redlands Municipal; Code, Section 12.44.270 does allow, pursuant to a written permit from the Quality of Life Director, a person or persons to drink or consume alcoholic beverages in public parks, only in enclosed public areas as defined by resolution of the City Council. Any other locations within the City's property requires the City Council approval and designation of the place for the sale and consumption thereof.

Tape or fencing of some kind shall be used for setting off the area for which the alcoholic beverages are served and consumed. Alcohol sales and distribution shall cease one hour prior to end of the event unless otherwise directed by RPD or ABC office.

ALCOHOL RELATED TO AIRPORT:

12.56.090: USE OF INTOXICATING LIQUOR OR DRUGS: No person shall operate or assist in the operation of any aircraft while under the influence of, or using, any intoxicating liquor or habit forming or hallucinatory or narcotic drug. No alcoholic beverage may be consumed or sold on the airport unless the city council shall have approved and designated the place for the sale and consumption thereof.

APPROVED: _____ DATE: _____ DENIED: _____ DATE: _____

CITY COUNCIL DATE (if applicable):_____

REDLANDS BICYCLE CLASSIC INC

EIN: [redacted] | United States

Other Names

REDLANDS BICYCLE CLASSIC

Auto-Revocation List

Organizations whose federal tax exempt status was automatically revoked for not filing a Form 990-series return or notice for three consecutive years.
Important note: Just because an organization appears on this list, it does not mean the organization is currently revoked, as they may have been reinstated.

Exemption Type: 501(c)(4)

Exemption Reinstatement Date: 12-15-2011

Revocation Date: 11-15-2010

Revocation Posting Date: 07-13-2011

Determination Letter

A favorable determination letter is issued by the IRS if an organization meets the requirements for tax-exempt status under the Code section the organization applied.

Final Letter(s)

FinalLetter_33-0231753_REDLANDSBICYCLECLASSICINC_12302011_01.tif [https://apps.irs.gov/pub/epostcard/dl/FinalLetter_33-0231753_REDLANDSBICYCLECLASSICINC_12302011_01.tif]

Copies of Returns (990, 990-EZ, 990-PF, 990-T)

Electronic copies (images) of Forms 990, 990-EZ, 990-PF or 990-T returns filed with the IRS by charities and non-profits.

- **Tax Year 2021 Form 990O**
- **Tax Year 2020 Form 990O**
- **Tax Year 2020 Form 990O**
- **Tax Year 2019 Form 990O**
- **Tax Year 2019 Form 990O**
- **Tax Year 2018 Form 990O**
- **Tax Year 2017 Form 990**
- **Tax Year 2016 Form 990O**

City Council/Successor Agency Meeting **J. 1.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Annual Report of the Cultural Arts Commission presented by Chair Daniel Gohman (Facilities and Community Services Director Crocker)

DISCUSSION:

For this evening's City Council Meeting, Vice-Chair Daniel Gohman will be presenting the Cultural Arts Commission's Annual Report.

City Council/Successor Agency Meeting **J. 2.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Annual Report of the Municipal Utilities/Public Works Commission presented by Commissioner Adekunle Ojo (Municipal Utilities and Engineering Director Harris)

DISCUSSION:

Chapter 2.38 of the Redlands Municipal Code establishes Municipal Utilities/Public Works Commission (MUPWC) appointment protocols, objectives, goals, and reporting requirements. Each year, a representative of the MUPWC presents an Annual Report to the City Council summarizing accomplishments of the previous year, and outlining goals for the next year. Tonight, MUPWC Commissioner Adekunle Ojo will present the Annual Report.

SUBMITTED BY:

John R. Harris, Municipal Utilities and Engineering Director

City Council/Successor Agency Meeting **J. 3.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Discussion and possible action relating to the Mid-Year General Fund Budget Review for Fiscal Year 2023-24 (Management Services/Finance Director Garcia)

MOTION(S):

If the City Council determines that staff's recommendation is appropriate, the following motion is provided:

I move to receive and file this report.

RECOMMENDATION:

Staff recommends that the City Council receive and file this report.

DISCUSSION:

The Mid-Year Budget Review provides an opportunity to assess the City's budget progression in the current fiscal year as compared to the Fiscal Year (FY) 2024 Mid-Biennium budget based on actual performance during the first seven (7) months of FY 2024. Based on this analysis, no budget revisions are currently recommended. This report will examine results from FY 2023; it will review the financial status of the current fiscal year (2024); and it will review the current economic climate as well as other important factors that may impact the General Fund moving forward. The next significant budget discussions will take place in May and June 2024, wherein City Council are provided with the City Manager's Recommended Biennial Budget covering fiscal years 2025 and 2026.

Fiscal Year 2023 Results

When comparing the audited results of Fiscal Year 2023 to the 2023 Mid-Biennium Budget Update, total revenues in the General Fund performed as expected, with a negative variance of roughly $1,320,480 (1.4%).

Revenue Category	FY 2023 Mid-Biennium (12-Month Estimate)	FY 2023 Audited Actual	Difference
Taxes	$ 93,398,704	$ 94,742,274	$ 1,343,570
General Government	13,931,642	11,175,466	(2,756,176)
Charges for Service	9,347,234	10,727,557	1,380,323
Transfers In	2,636,093	2,307,193	(398,900)
Use of Reserves	15,438,919	14,479,623	(959,296)

Total	**$ 134,752,592**	**$ 133,432,112**	**$ (1,320,480)**

The positive variance in tax revenue is due to a combination of higher performing revenues for property tax, sales tax, and property transfer tax coupled with declines from mid-biennium projections for Measure T sales tax and franchise fee revenue for a net positive impact of $1.3 million. For General Government revenue, the negative variance was mainly attributable to a decline in the amount of revenue anticipated for investment income. This decline has to do with required accounting practices. Government Accounting Standards Board Statement No. 31 (GASB 31) requires that investment gains or losses of market values as of June 30th of a fiscal year be recorded in the financial statements. During FY 2023, the City's investments decreased in value due to prevailing market conditions. Transfers in from other funds were less, due mainly to decreases in receipts for the Gas Tax and Traffic Safety funds. These are special revenue funds that collect revenue and transfer them to the General Fund for approved purposes and are effectively cleared to a zero balance at the end of the fiscal year. The variance in use of reserves is typical, as most project-specific uses of reserves are not fully completed within one fiscal year. If a reserve-funded project is carried forward in FY 2024, then the use of its corresponding reserve will be as well.

In terms of expenditures, FY 2023 saw a positive variance (budget savings) of roughly $4.8 million compared to the mid-biennium budget update. This variance is a result of a large unspent portion of the appropriations budget for each department, meaning that there were savings realized both from unspent projects as well as staffing vacancies. In addition to this savings, $16.9 million in unspent funding has been added to a reserve for encumbrances to carry that spending forward into the current fiscal year. These changes are summarized below:

Expenditure Category	FY 2023 Mid-Biennium (12-Month Estimate)	FY 2023 Audited Actual	Difference
Department Budgets	$ 114,876,783	$ 92,497,313	$ 22,379,470
Transfers to Other Funds	8,508,458	8,937,560	(429,102)
New/Increases to Reserves	4,949,701	22,124,873	(17,175,172)
Total	**$ 128,334,942**	**$ 123,559,746**	**$ 4,775,196**

These two components, revenue and expenditures, combine to impact the General Fund's ending unassigned fund balance as of June 30, 2023. A summary of those changes is provided below.

Category	FY 2023 Mid-Biennium Budget (12-Month Estimate)	FY 2023 Audited Actual	Difference / Savings
Beginning Unassigned Fund Balance	$ 26,543,340	$ 26,543,340	-
Revenues/Sources	134,752,592	133,432,112	(1,320,480)
Expenditures/Uses	128,334,942	123,559,746	4,775,196
Surplus / (Deficit)	6,417,650	9,872,365	3,454,715
Ending Unassigned Fund Balance	**$ 32,960,990**	**$ 36,415,705**	**3,454,715**

Fiscal Year 2024 Review

As adopted by the City Council on November 7, 2023, the FY 2024 General Fund budget included the use of roughly $9.5 million in unassigned fund balance to cover certain modifications that were made as a result of labor negotiations, additional staffing to enhance service levels, additional capital projects, and increases in operating expenditures. The use of unassigned fund balance was recommended in order to invest the growing unassigned fund balance levels into services that would benefit the community.

Department appropriations were increased by 13.8% to $112,663,887 from their original budgets of $98,979,199. Since the Mid-Biennium Budget for FY 2024 was adopted, those appropriation levels have increased by $18,104,559 to account for the projects carried forward from FY 2023 and various additional appropriations that have been approved by Council since November 2023.

Along with the Mid-Biennium revisions to department spending, revenue projections were also increased by 7%, or $7.8 million. Additionally, roughly $260,000 has been added to department revenues since the Mid-Biennium revisions.

More adjustments will occur, as they typically do, during the next several months as departments prepare the Fiscal Year 2025 & 2026 Biennial Budget requests. This may include revisions to the current FY 2024. All such changes and requests for the upcoming budget year will be presented to City Council with the Biennial Proposed Budget for FY 2025 & 2026 in May and June of this year.

Taking a look at the seven-month actuals presented in the attachment to this report, we will review General Fund revenues as of January 31, 2024. Property tax, one of the largest revenue categories, is at $22,444,914, or 58.6% of budget, compared to 53.5% of budget last year. The 3-year historical average for property tax revenue in prior years at January 31 is 52.5%, suggesting, along with other analyses, that the City is on track to realize and exceed revenue forecasts for property taxes.

Property taxes are driven by the value of residential and commercial real estate. Because of assessment practices, property tax revenues typically reflect the value of a property anywhere from 18 months to several years prior, so they are less immediately responsive to economic changes than other types of taxes. This makes them a lagging indicator of economic conditions, generally speaking. The better-than-expected performance of property tax revenue in prior fiscal years reflects sizable growth in the City’s assessed value due, in part, to new residential and non-residential development, while the vast majority of this increase is attributed to home sales at prices above their assessed value.

Basic sales tax as well as Measure T sales tax are at 37.4% and 40.6% respectively, while those amounts last year were 40.3% and 42.2% respectively, suggesting that, despite a lag in receipts that is typical for this source of revenue, there may be more sensitivity in consumer spending that we see unfolding here. There are many other factors that affect the year-to-date amounts such that this very minor difference in amount realized at January 31, 2024, may not be an indicator of economic slowdown, but rather a result of delayed payments by major retailers or pending allocation changes at the California Department of Tax and Fee Administration (CDTFA).

Transient occupancy (hotel) tax is at 64.3% realized, compared with 51.8% in the prior fiscal year. This revenue category also experiences a delay in collection. It is very likely that this

revenue category will exceed revenue projections for FY 2024.

Franchise fees are received quarterly from Frontier and Time Warner, as well as annually from Southern California Edison and the Gas Company, with the latter contributing the largest amount in this category. The Gas Company franchise fee in the prior fiscal year (2023) was $3,029,100, compared to its 5-year average of roughly $1.2 million. Accordingly, the revenues for this category were budgeted at a rolling 5-year average level to accommodate the year-to-year volatility. Annual payments will be sent by the franchises in April 2024. At January 31, 2024, the budget for this category was only 6.5% realized. This is because the annual payments from the gas and electrical utility are not received until early April. The 3-year historical average for this revenue at January 31st is 6.6% realized.

Business license revenue at mid-year is at $1.36 million, or 26.7% of budget compared to $1.08 million (or 19.5% of budget) at this time last year. This is typical due to the timing of business license expiration dates and the deadline for payments (in March). You will note that investment income is very high, compared to budget. These are actual earnings combined with a reversal of a prior year accounting entry that reduced this revenue category to account for the reduced “market value” of the City’s investment portfolio. In this high interest rate economy, we are likely to see another reduction in “market value” of the investment portfolio such that most of this gain will be reduced. Actual investment income over the first two quarters of FY 2024 for the General Fund is $1.28 million.

Department charges for service remain in line with the 3-year historical average of 43.7%. As of January 31, charges for service were at $4,315,677, or 44.8% realized. As a result of the implementation of a new fee schedule approved by the City Council in December 2023, revenue for these charges will likely exceed budget once the majority of the fees become effective (60 days following the adoption of the resolution).

On the expenditures side, the addition of carryovers from FY 2023 is reflected in the Adjusted Budget column for departments. These carryovers are found in each department and represent purchase orders, projects, capital and contractual expenditures that were included in last year's budget, but at the end of the fiscal year 2023, had not yet been encumbered or spent. No changes are proposed for department budgets, transfers or use of reserves. If warranted, the City Manager will direct any modifications to these categories be taken to City Council for approval individually until the new Biennial Budget has been adopted. It is important to note that the Biennial Budget will also revise estimates for the current fiscal year (2024).

Economic & Budgetary Outlook

At the end of 2023, the economy remained resilient despite still-tight financial conditions – alleviating concerns about a near-term recession. With price pressures receding and the labor market gradually cooling, prospects for the Federal Reserve’s goal of a “soft landing” (slowing inflation without an associated recession) have improved. With inflation improving, it is likely that the Federal Reserve may begin cutting rates in 2024. Despite slowing job growth and high interest rates, US real GDP growth averaged 3.1% over the first three quarters of 2023, held up by strong consumption and business investment.

Budget assumptions for Fiscal Year 2024 remain unchanged from the Mid-Biennium Budget Update, with the exception of the previously approved carryovers from FY 2023 and various additional appropriations approved by Council. Economic conditions will continue to be closely monitored and factored into the 2025 - 2026 General Fund Forecast for inclusion in the City Manager’s Proposed Biennial Budget over the coming months. It is anticipated that any growth previously seen in property and sales tax revenue will continue, but at a much slower pace reflecting the deceleration of inflation and limited interest-sensitive consumption for the time

being. However, there are several risk factors that could negatively impact the regional and local economy, including a recession driven by persistently high interest rates that causes deeper declines in spending and dampens economic activity, and geopolitical tensions that could cause oil price volatility and supply chain issues. As economic conditions are unsettled, the City will need to remain prepared to adjust further if necessary.

ALTERNATIVES:

The City Council may choose to approve, modify or table staff recommendations.

STRATEGIC PLAN:

N/A

SUBMITTED BY:
Danielle Garcia, Management Services/Finance Director

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Janice McConnell, Assistant City Manager
Chris Boatman, Assistant City Manager

Fiscal Impact

Fiscal Year: FY 2023-24

Discussion:

There is no fiscal impact associated with receiving and filing this report.

Attachments

Attachment A - FY 2024 General Fund Mid-Year Schedule
Attachment B - Mid-Year Comparison of Revenues & Expenditures
Attachment C - 10-Year Trend - Sources & Requirements
Attachment D - General Fund Activity FY 2015 - 2024
Attachment E - General Fund Committed & Assigned Reserves

ATTACHMENT A

Mid-Year Report - General Fund as of January 31, 2024

AVAILABLE FINANCIAL SOURCES:	FY 2023			FY 2024			
	AUDITED[1]	1/31/2023	%	ORIG. BUDGET	ADJ. BUDGET	1/31/2024	%
BEGINNING FUND BALANCE - UNASSIGNED	26,543,340	26,543,340		21,659,006	36,415,705	36,415,705	100.0%
REVENUES:							
TAXES:							
PROPERTY	38,326,753	20,492,585	53.5%	37,376,555	38,269,622	22,444,914	58.6%
SALES	28,216,967	11,375,753	40.3%	28,051,502	28,105,261	10,513,213	37.4%
MEASURE T SALES	20,415,886	8,619,175	42.2%	18,696,000	19,953,000	8,093,770	40.6%
PROPERTY TRANSFER	611,913	384,801	62.9%	571,000	571,000	152,959	26.8%
TRANSIENT OCCUPANCY	2,311,290	1,196,353	51.8%	1,609,000	1,609,000	1,034,891	64.3%
FRANCHISE	4,487,821	183,881	4.1%	2,567,833	2,567,833	167,693	6.5%
MINING	371,644	128,594	34.6%	360,000	360,000	112,041	31.1%
TOTAL TAXES	94,742,274	42,381,142	44.7%	89,231,890	91,435,716	42,519,481	46.5%
GENERAL GOVERNMENT:							
BUSINESS LICENSES	5,550,894	1,080,618	19.5%	4,900,000	5,100,000	1,363,057	26.7%
MOTOR VEHICLE FEES	74,686	-	0.0%	65,000	65,000	-	0.0%
GENERAL GOVERNMENT SERVICE CHARGE	4,102,330	2,378,308	58.0%	4,379,383	4,379,383	2,497,325	57.0%
INVESTMENT INCOME	275,492	3,640,505	1321.5%	200,000	200,000	5,830,758	2915.4%
OTHER	1,172,063	172,602	14.7%	584,600	584,600	183,273	31.4%
TOTAL GENERAL GOVERNMENT	11,175,466	7,272,032	65.1%	10,128,983	10,328,983	9,874,413	95.6%
CHARGES FOR SERVICES:							
DEVELOPMENT SERVICES	4,037,054	2,313,378	57.3%	3,439,239	3,439,239	1,891,896	55.0%
LIBRARY	83,541	22,042	26.4%	27,890	27,890	18,889	67.7%
POLICE	827,905	236,780	28.6%	522,982	613,723	263,028	42.9%
COMMUNITY SERVICES	597,954	240,536	40.2%	636,015	636,015	286,824	45.1%
FIRE	444,205	244,880	7.2%	793,400	800,222	203,990	25.5%
FACILITIES & ANIMAL CONTROL	3,421,597	1,424,336	108.3%	2,874,218	3,034,217	1,190,754	39.2%
ENGINEERING	1,315,301	640,387	48.7%	1,090,000	1,090,000	460,296	42.2%
TOTAL CHARGES FOR SERVICES	10,727,557	5,122,339	47.7%	9,383,744	9,641,306	4,315,677	44.8%
TOTAL REVENUES	116,645,296	54,775,513	47.0%	108,744,617	111,406,005	56,709,571	50.9%
INTERFUND TRANSFERS FROM OTHER FUNDS:							
GAS TAX (207)	1,820,881	1,128,099	62.0%	1,884,307	1,884,307	1,202,374	63.8%
TRAFFIC SAFETY (223)	135,579	63,407	46.8%	202,000	202,000	79,231	39.2%
WATER (501, 503)	253,614	-	-	282,516	282,516	-	0.0%
SOLID WASTE (511, 513)	62,387	-	-	57,186	57,186	-	0.0%
SEWER (521)	26,738	-	-	24,508	24,508	-	0.0%
INFORMATION TECHNOLOGY (604)	7,994	-	0.0%	-	-	-	-
TOTAL INTERFUND TRANSFERS FROM OTHER FUNDS	2,307,193	1,191,506	51.6%	2,450,517	2,450,517	1,281,605	52.3%
CANCELLATIONS OR DECREASES TO RESERVES:							
ENCUMBRANCES	12,970,503	-	0.0%	-	16,873,363	-	0.0%
PREPAID ITEMS	197,266	-	0.0%	-	-	-	0.0%
ADVANCES RECEIVABLE	135,809	-	0.0%	-	-	-	0.0%
PEG FEES RESERVE	7,357	-	0.0%	-	-	-	0.0%
PARKING IMPROVEMENTS RESERVE	-	-	0.0%	-	750,000	-	0.0%
MAINT; BLDGS & IMPROV. RESERVE	-	-	0.0%	-	620,000	-	0.0%
CAPITAL OVER $50,000 RESERVE	421,256	-	0.0%	-	408,332	-	0.0%
FUTURE FACILITIES RESERVE	-	-	0.0%	-	4,618,579	-	0.0%
PUBLIC BENEFIT RESERVE	747,431	-	0.0%	-	-	-	0.0%
TOTAL CANCELLATIONS OR DECREASES TO RESERVES	14,479,622	-	0.0%	-	23,270,274	-	0.0%
TOTAL AVAILABLE FINANCIAL SOURCES (including beginning Fund Balance - Unassigned)	159,975,451	82,510,359	51.6%	132,854,140	173,542,501	94,406,881	54.4%

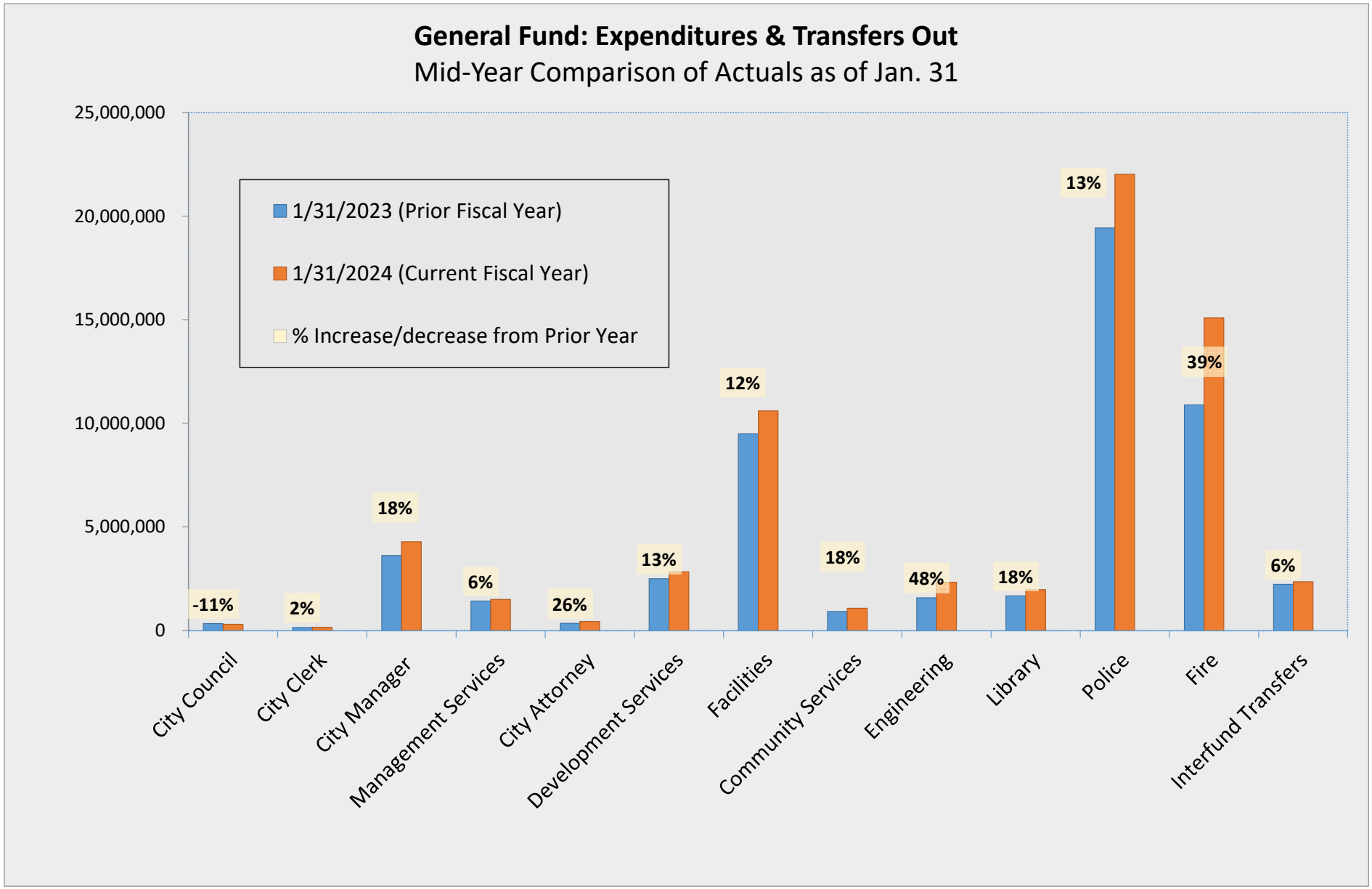
ATTACHMENT A

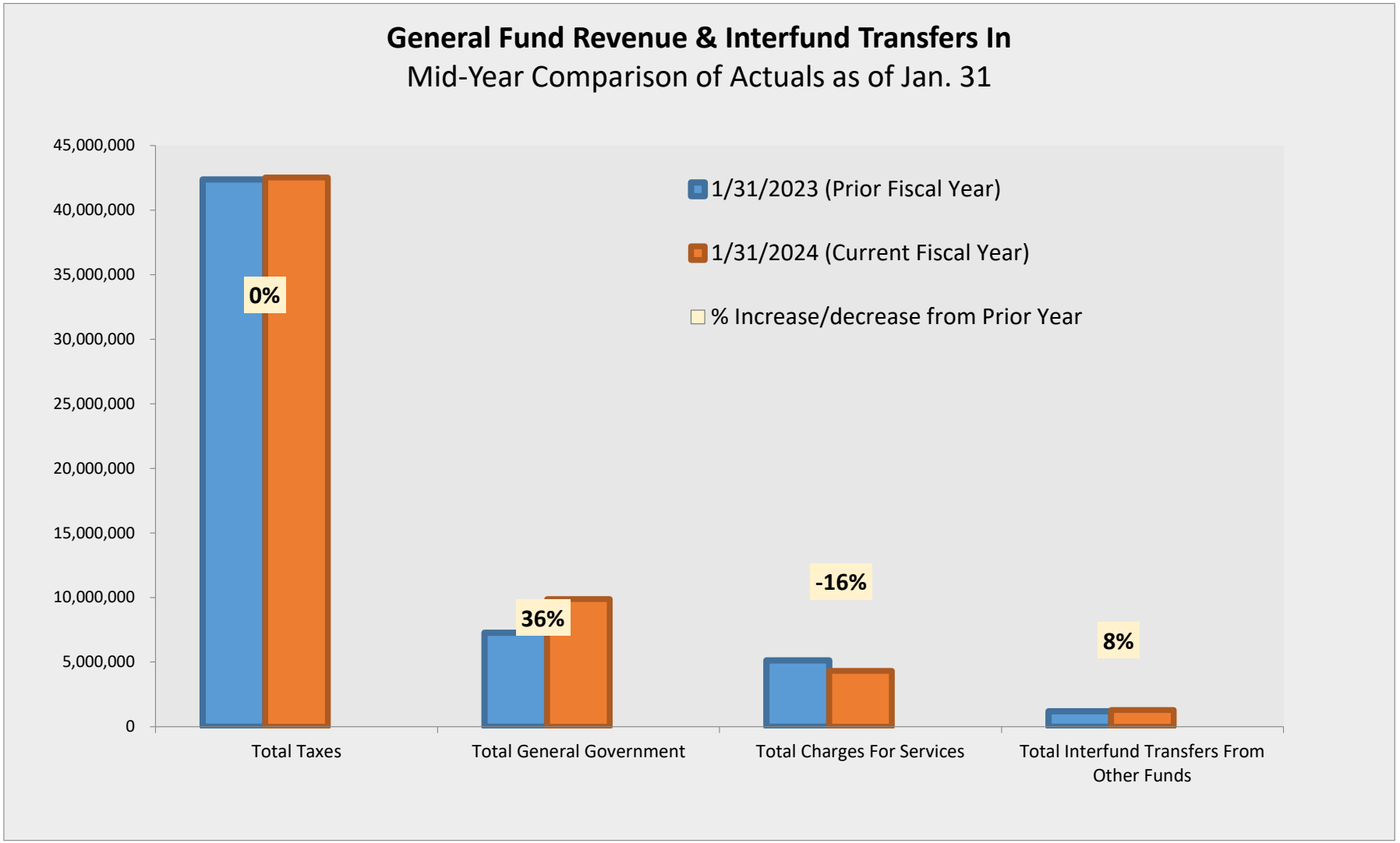
Mid-Year Report - General Fund as of January 31, 2024

	FY 2023			FY 2024			
	AUDITED[1]	1/31/2023	%	ORIG. BUDGET	ADJ. BUDGET	1/31/2024	%
FINANCIAL REQUIREMENTS:							
APPROPRIATIONS/EXPENDITURES:							
CITY COUNCIL	584,672	336,992	57.6%	422,788	448,496	299,903	66.9%
CITY CLERK	370,465	150,962	40.7%	453,870	474,369	154,315	32.5%
CITY MANAGER (incl. HR)	5,964,188	3,623,934	60.8%	7,667,449	8,246,672	4,286,363	52.0%
MANAGEMENT SERVICES	2,552,804	1,421,805	55.7%	2,845,655	3,345,633	1,504,632	45.0%
CITY ATTORNEY	744,619	350,167	47.0%	809,835	860,568	441,342	51.3%
DEVELOPMENT SERVICES	4,574,959	2,505,811	54.8%	4,501,626	7,042,059	2,841,729	40.4%
FACILITIES	20,289,194	9,504,831	46.8%	12,452,245	26,307,656	10,598,744	4.1%
COMMUNITY SERVICES	1,947,036	920,376	47.3%	2,848,118	3,369,108	1,083,268	314.6%
ENGINEERING	3,166,220	1,578,247	49.8%	7,227,031	6,356,974	2,340,134	36.8%
LIBRARY	3,125,090	1,674,399	53.6%	3,200,206	4,490,708	1,971,075	43.9%
POLICE	31,788,285	19,426,313	61.1%	35,551,297	40,457,776	22,012,927	54.4%
FIRE	17,389,782	10,891,231	62.6%	20,999,079	29,368,427	15,085,072	51.4%
TOTAL APPROPRIATIONS	92,497,313	52,385,067	56.6%	98,979,199	130,768,446	62,619,505	47.9%
INTERFUND TRANSFERS TO OTHER FUNDS:							
GOVERNMENTAL GRANTS FUND (200)	97	-	0.0%	-	-	-	0.0%
PARAMEDIC FUND (205)	4,152,246	2,229,315	53.7%	5,326,446	6,133,994	2,358,790	38.5%
DRBA (236)	104,064	-	0.0%	-	-	-	0.0%
PARKING AUTHORITY (237)	11,463	-	0.0%	12,799	12,799	-	0.0%
LANDSCAPE MAINTENANCE DISTRICT (263)	7,344	-	0.0%	21,839	21,839	-	0.0%
SAFETY / CITY HALL FUND (406)	-	-	0.0%	-	4,618,579	-	0.0%
SEWER SERVICE FUND (521)	21,450	-	0.0%	-	-	-	0.0%
CITRUS GROVES (538)	64,850	-	0.0%	-	-	-	0.0%
LIABILITY SELF-INSURANCE (602)	4,576,046	-	0.0%	4,150,000	4,650,000	-	0.0%
SUCCESSOR AGENCY (820)	-	-	0.0%	-	384,563	-	0.0%
TOTAL INTERFUND TRANSFERS TO OTHER FUNDS	8,937,560	2,229,315	24.9%	9,511,084	15,821,774	2,358,790	14.9%
NEW OR INCREASES TO RESERVES:							
ENCUMBRANCES	16,873,363	-	0.0%	-	-	-	0.0%
MAINT;BLDGS & IMPROV. RESERVE	562,425	-	0.0%	-	-	-	0.0%
GENERAL FUND CONTINGENCIES	562,425	-	0.0%	-	-	-	0.0%
CAPITAL OVER $50,000 RESERVE	562,425	-	0.0%	-	-	-	0.0%
UNFUNDED MANDATES RESERVE	562,245	-	0.0%	-	-	-	0.0%
PEG FEES RESERVE	41,107	-	0.0%	-	-	-	0.0%
ADVANCES RECEIVEABLE	178,015	-	0.0%	-	-	-	0.0%
PUBLIC BENEFIT RESERVE	13,800	-	0.0%	-	-	-	0.0%
FUTURE FACILITY RESERVES	2,700,000	-	0.0%	2,700,000	-	-	0.0%
DONATIONS	69,068	-	0.0%	-	-	-	0.0%
TOTAL NEW OR INCREASES TO RESERVES	22,124,873	-	-	2,700,000	0	0	
TOTAL FINANCIAL REQUIREMENTS	123,559,746	54,614,382	44.2%	111,190,283	146,590,220	64,978,295	44.3%
AUTHORIZED USE OF UNASSIGNED FUND BALANCE					9,463,424		
SOURCES OVER/(UNDER) REQUIREMENTS	**9,872,365** [2]			4,851	0		
ENDING FUND BALANCE - UNASSIGNED	**36,415,705**			**21,663,857**	**26,952,281**		

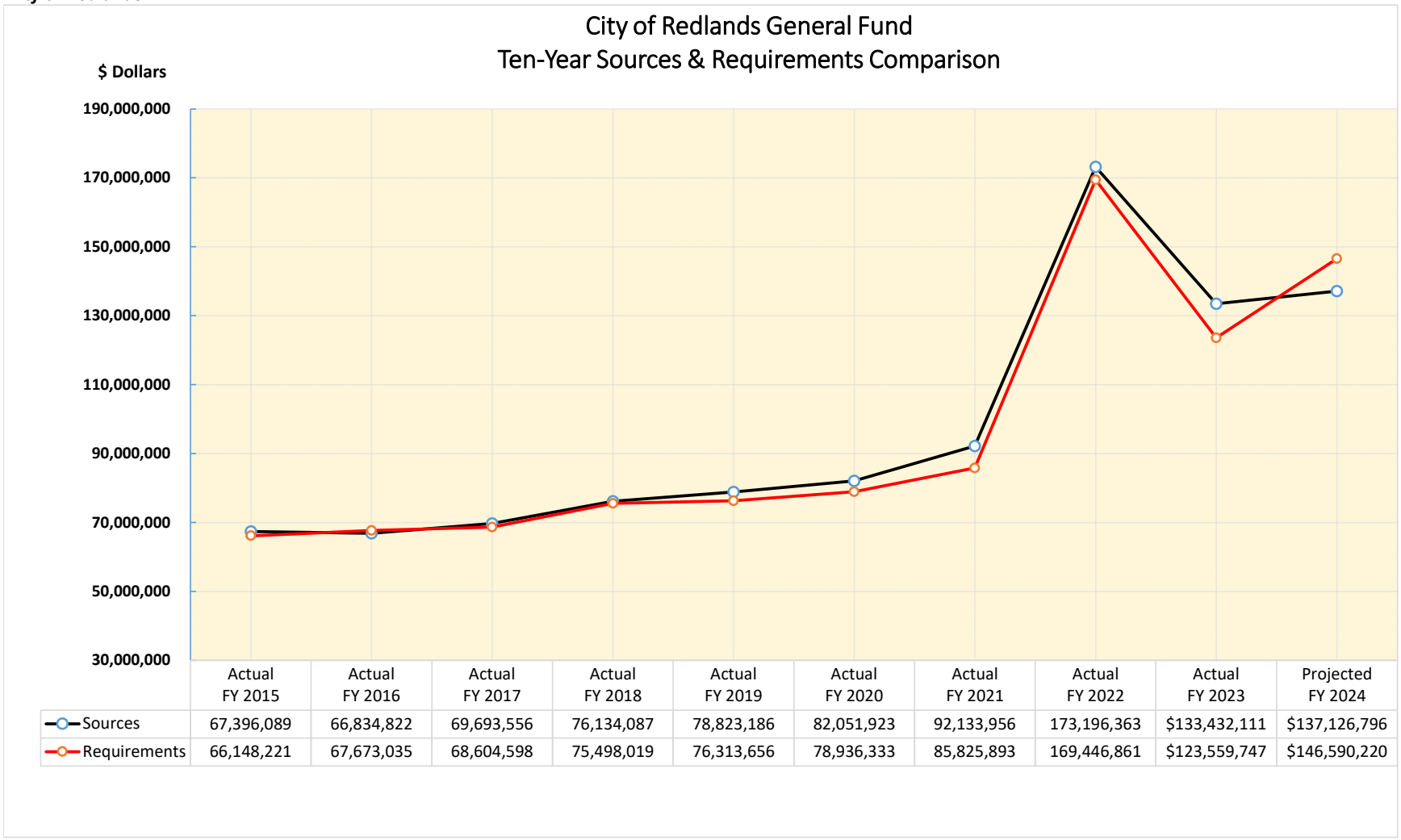
[1] These are audited fiscal year-end figures.

[2] The savings from FY 2023 is programmed to cover expected shortfalls in FY 2024 for one-time expenses


General Fund: Expenditures & Transfers Out
Mid-Year Comparison of Actuals as of Jan. 31
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
0
1/31/2023 (Prior Fiscal Year)
1/31/2024 (Current Fiscal Year)
% Increase/decrease from Prior Year
-11%
2%
18%
6%
26%
13%
12%
18%
48%
18%
13%
39%
6%
City Council
City Clerk
City Manager
Management Services
City Attorney
Development Services
Facilities
Community Services
Engineering
Library
Police
Fire
Interfund Transfers


General Fund Revenue & Interfund Transfers In
Mid-Year Comparison of Actuals as of Jan. 31
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
0
1/31/2023 (Prior Fiscal Year)
1/31/2024 (Current Fiscal Year)
% Increase/decrease from Prior Year
0%
36%
-16%
8%
Total Taxes
Total General Government
Total Charges For Services
Total Interfund Transfers From Other Funds

City of Redlands



	Actual FY 2015	Actual FY 2016	Actual FY 2017	Actual FY 2018	Actual FY 2019	Actual FY 2020	Actual FY 2021	Actual FY 2022	Actual FY 2023	Projected FY 2024
Sources	67,396,089	66,834,822	69,693,556	76,134,087	78,823,186	82,051,923	92,133,956	173,196,363	$133,432,111	$137,126,796
Requirements	66,148,221	67,673,035	68,604,598	75,498,019	76,313,656	78,936,333	85,825,893	169,446,861	$123,559,747	$146,590,220

ATTACHMENT D

GENERAL FUND ACTIVITY: FY 2015 THROUGH 2024

CITY OF REDLANDS

FINANCIAL SOURCES:	**AUDITED 2014-2015**	**AUDITED 2015-2016**	**AUDITED 2016-2017**	**AUDITED 2017-2018**	**AUDITED 2018-2019**	**AUDITED 2019-2020**	**AUDITED 2020-2021**	***ADJUSTED* 2021-2022**	**AUDITED 2023**	***ADJUSTED* 2024**
BEGINNING FUND BALANCE - UNASSIGNED	$8,725,981	$9,973,849	$9,135,636	$10,224,594	$10,860,661	$13,370,190	$16,485,775	$22,793,838	$26,543,340	$36,415,704
Revenues	$ 59,451,272	$ 61,529,313	$ 65,454,809	70,424,722	72,870,469	74,541,201	82,782,239	107,830,947	116,645,296	111,406,005
Interfund Transfers In	4,888,212	2,498,055	1,768,125	2,125,072	2,802,538	2,568,806	6,379,038	4,083,734	2,307,193	2,450,517
Proceeds from Land Sales	-	-	-	-	-	-	-	43,393,103	-	-
Decrease in Reserve for Advances Receivable [2]	222,874	-	-	-	44,913	224,208	155,086	501,100	135,809	-
Decrease in Reserve for Prepaid Items	-	-	46,941	151,551	192,259	197,202	183,522	209,601	197,266	-
Decrease in Reserve for Fire Equipment Replacement	136,924	136,924	136,924	60,000	-	-	-	-	-	-
Decrease in Reserve for General Fund Vehicles	-	40,570	-	296,924	50,000	-	-	-	-	-
Decrease in Reserve for Safety Vehicles	-	-	-	52,034	-	-	-	-	-	-
Decrease in Reserve for Parking Improvements	-	-	-	-	-	-	-	-	-	750,000
Decrease in Reserve for General Plan	350,000	-	-	-	-	-	-	-	-	-
Decrease in Reserve for Maint.: Park Facilities	150,000	-	-	-	-	-	-	-	-	-
Decrease in Reserve for Maint.: Bldg & Improvements	-	-	-	50,000	11,030	13,464	-	-	-	620,000
Decrease in Reserve for Capital Repl: HVAC, IT Equipl.	100,000	-	-	-	-	-	-	-	-	-
Decrease in Reserve for Capital Over $50,000	-	-	-	302,355	108,040	-	84,392	55,863	421,256	408,332
Decrease in Reserve for Unfunded Mandates	-	-	-	-	-	100,000	-	-	-	-
Decrease in Reserve for PEG Fees	-	-	-	327,464	-	-	901	1,347	7,357	-
Decrease in Reserve for Sidewalk Improvements	-	-	-	-	-	-	-	849,538	-	-
Decrease in Reserve for Future Facilities	-	-	-	-	-	-	-	16,081,616	-	4,618,579
Decrease in Reserve for Animal Shelter	-	-	-	-	-	-	-	25,292	-	-
Decrease in Reserve for Public Benefit	-	-	-	-	-	-	-	159,960	747,431	-
Net Activity for donations & deposits reconciliation	-	-	-	978,450	11,854	122,465	-	-	-	-
Decrease in Reserve for Donations	-	-	-	-	-	-	33,826	4,262	-	-
Cancellation of Reserve for Encumbrances	2,096,807	2,629,960	2,286,757	1,365,514	2,732,083	4,284,577	2,514,952	-	12,970,503	16,873,363
TOTAL CURRENT SOURCES	$ 67,396,089	$ 66,834,822	$ 69,693,556	$ 76,134,087	$ 78,823,186	$ 82,051,923	$ 92,133,956	$ 173,196,363	$ 133,432,111	$ 137,126,796
FINANCIAL REQUIREMENTS:										
Expenditures [3]	$ 53,107,420	$ 58,221,707	$ 60,521,061	$ 63,266,834	$ 65,513,765	$ 70,565,921	$ 67,416,595	$ 93,814,566	$ 92,497,314	$ 130,768,446
Interfund Transfers Out	7,757,843	5,453,779	6,102,083	6,072,848	5,423,918	5,475,096	7,128,009	23,386,161	8,937,560	15,821,774
Increase in Reserve for Advances Receivable [2]	782	915,131	88,913	175,944	-	-	-	31,255	178,015	-
Increase in Reserve for Encumbrances	2,629,960	2,286,757	1,365,514	2,732,083	4,284,577	2,514,952	7,083,392	5,887,111	16,873,363	-
Increase in Reserve for Parking Improvements	-	-	-	1,944,001	-	-	-	-	-	-
Increase in Reserve for Prepaids	-	46,941	151,551	192,259	210,180	183,522	196,623	721,316	-	-
Increase in Reserve for Fire Equipment Replacement	225,000	-	60,000	50,000	-	-	358,142	-	-	-
Increase in Reserve for General Fund Vehicles	450,000	-	-	-	-	-	-	-	-	-
Increase in Reserve for General Plan	350,000	-	-	-	-	-	-	-	-	-
Increase in Reserve for General Fund Contingencies	269,304	187,180	-	163,344	-	-	-	946,209	562,425	-
Increase in Reserve for Maint. Bldgs & Improvements	469,304	187,180	-	163,344	-	-	-	946,209	562,425	-
Increase in Reserve for Capital Over $50,000	169,304	187,180	150,000	163,344	-	108,040	-	946,209	562,425	-
Increase in Reserve for Unfunded Mandates	169,304	187,180	-	163,344	-	-	-	946,209	562,245	-
Increase in Reserve for Maint. Prk Playgrnds, Equip. Facilities	250,000	-	-	-	-	-	-	-	-	-
Increase in Reserve for Capital Replacememnt:HVAC, IT Equip	300,000	-	-	-	-	-	-	-	-	-
Increase in Reserve for PEG Fees	-	-	-	410,675	58,784	76,156	52,844	34,821	41,107	-
Increase in Reserve for Public Benefit	-	-	-	-	-	-	-	14,338	13,800	-
Increase in Reserve for Animal Shelter	-	-	-	-	-	-	12,646	-	-	-
Increase in Reserve for Donations	-	-	-	-	-	-	-	51,998	69,068	-
Restate Special Deposits Reserve	-	-	-	-	-	12,646	3,577,642	-	-	-
Fixed Asset Adjustments	-	-	-	-	822,432	-	-	-	-	-
Increase in Reserve for Future Facilities	-	-	-	-	-	-	-	38,193,103	2,700,000	-
Increase in Reserve for Sidewalk Improvements	-	-	-	-	-	-	-	1,000,000	-	-
Increase in Reserve for Public Safety/Homelessness	-	-	-	-	-	-	-	2,527,356	-	-
Net Other Activity Affecting Fund Balance	-	-	165,476	-	-	-	-	-	-	-
TOTAL CURRENT REQUIREMENTS	$ 66,148,221	$ 67,673,035	$ 68,604,598	$ 75,498,019	$ 76,313,656	$ 78,936,333	$ 85,825,893	$ 169,446,861	$ 123,559,747	$ 146,590,220
CURRENT SOURCES OVER(UNDER) REQUIREMENTS	$ 1,247,868	$ (838,213)	$ 1,088,958	$ 636,067	$ 2,509,530	$ 3,115,590	$ 6,308,063	$ 3,749,502	$ 9,872,364	$ (9,463,424)
ENDING FUND BALANCE - UNASSIGNED [1]	$ 9,973,849	$ 9,135,636	$10,224,594	$10,860,661	$13,370,190	$16,485,775	$ 22,793,838	$ 26,543,340	$ 36,415,704	$ 26,952,280
COMMITTED & ASSIGNED FUND BALANCES (RESERVES)										
COMMITTED FUND BALANCE (STABILIZATION)	$ 7,935,152	$ 8,122,332	$ 8,122,332	$ 8,285,676	$ 8,285,676	$ 8,285,676	$ 8,285,676	$ 9,231,885	$ 9,794,310	$ 9,794,310
ASSIGNED - ALL CATEGORIES	1,883,794	2,267,840	2,130,916	4,063,636	3,894,566	3,889,142	38,745,693	31,734,961	38,745,693	32,348,782
ENDING BALANCE - STABILIZATION & ASSIGNED	$ 9,818,946	$ 10,390,172	$ 10,253,248	$ 12,349,312	$ 12,180,243	$ 12,174,818	$ 47,031,369	$ 40,966,846	$ 48,540,003	$ 42,143,092
City of Redlands Population [4]	69,814	68,368	70,851	70,196	71,441	72,863	72,739	72,259	71,972	71,972
Per Capita Expenditures	$760.70	$851.59	$854.20	$901.29	$885.58	$899.14	$926.83	$976.57	$1,285.18	$936.71

Notes:

[1] Does not include Committed and Assigned Fund Balances

[2] An increase or decrease in Reserve for Advances Receivables reflects activity on loans to the Public Facilities Fund from the General Fund to cover debt service of COPs issued in FY 2003-2004.

[3] Expenditures are estimated by departments as fully spent, which includes anticipated carryovers and encumbrances.

[4] Department of Finance Population estimates.

City of Redlands
General Fund Committed/Assigned Fund Balance (Reserves)
Fiscal Year 2024

Object	Fund Balance	Audited Balance 6/30/2023	Approved Increases To Date	Approved (Decreases) To Date	Estimated Balance 6/30/2024
	Committed:				
3205	Contingency	$ 9,794,310	$ -	$ -	$ 9,794,310
	Assigned:				
3208	Reserve for Nevada Palmetto - Parks & Rec.	752,734			752,734
3209	Reserve for Nevada Palmetto - Trails Develpmt.	850,460			850,460
3209	Reserve for Nevada Palmetto - Open Space	1,058,264			1,058,264
3302	Reserve for Parking Improvements	1,944,001		(750,000)	1,194,001
3303	Reserve for Maintenance: Park Facilities	100,000			100,000
3304	Reserve for Maintenance: Bldgs. & Improv.	2,253,968		(620,000)	1,633,968
3306	Reserve for Unfunded Mandates	1,928,462			1,928,462
3307	Reserve for Capital: HVAC & IT Equip.	200,000			200,000
3308	Reserve for Capital: >$50,000	1,314,416		(408,332)	906,084
3309	Reserve for Vehicle Replacement	62,506			62,506
3312	Reserve for Fire Equipment	766,284			766,284
3318	Reserve for Sidewalk Improvements	150,462			150,462
3319	Reserve for Future Facilities	24,811,486		(4,618,579)	20,192,907
3320	Reserve for Public Safety Facility/Homelessness	2,527,356			2,527,356
	Reserve for Animal Shelter	25,292			25,292
		38,745,693	-	(6,396,911)	32,348,782
		48,540,003	-	$ (6,396,911)	$ 42,143,092

City Council/Successor Agency Meeting **J. 4.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Discussion and possible action regarding a potential ordinance to ban the use of gas-powered leaf blowers within the City of Redlands (Facilities and Community Services Director Crocker)

DISCUSSION:

On August 22, 2023, the Redlands City Council called a special meeting to discuss research project requests by individual Council Members. From this general discussion, seven (7) primary projects were identified:

1. Northside Economic Development/Opportunity Zones (Small Business Incentives);
2. Develop options for building a parking structure at City Hall;
3. Broadband improvement in underserved areas of the City;
4. **Ordinance to ban gas leaf blowers in Redlands;**
5. Bicycle share program;
6. Cannabis tax;
7. Explore the creation of a Mental Health Response Team.

This agenda report focuses on a potential ordinance to ban gas-powered leaf blowers in the City of Redlands.

At the direction of the City Council, staff conducted research regarding a potential ban on gas-powered leaf blowers. Areas of research included current ordinances in other cities, potential legal issues, implementation and enforcement, and supportive funding.

What Other Jurisdictions Have Done:

There are a number of cities in Southern California that have current ordinances in place that ban the use of gas-powered blowers and several that ban blowers altogether. The justification for these ordinances was found to be based on several lines of reasoning: air pollution from the 2-stroke engines that typically power leaf blowers; noise associated with leaf blowers; and dust and debris being spread across property lines and into the air.

Research indicates that no cities in San Bernardino County have enacted an ordinance to ban gas-powered leaf blowers, but several in Riverside and Orange Counties have, and more than a dozen cities in LA County and the County of LA itself have current bans, with at least three that have banned leaf blowers entirely. In 2021, the Governor of California signed into law AB 1346 banning the sale of gas-powered leaf blowers and string trimmers (weed whackers) starting July 1, 2024. The law also establishes emissions reductions for existing gas-powered leaf blowers as of July 1, 2022.

The most recent local implementation of a gas-powered leaf blower ban was done by the City of Palm Springs in 2019. Palm Springs engaged in an extensive informational campaign prior to the ordinance taking effect and enforcement officers continued this educational approach for the first six months the ordinance was in place. The penalty for non-compliance in Palm Springs is $100 for the first offense and $250 for the second offense. Additionally, Palm Springs offers a 40% rebate (up to $100) on new electrical equipment when you trade in a working gasoline unit through a local lawnmower shop. The City of Palm Springs has continued to struggle to enforce the ordinance and cited staffing resources, the ability to respond in time to witness violations and cite violators, false alarms due to other power equipment sounding like a leaf blower, and an inability to recognize which landscape companies are violating the ordinance since few have city business licenses. It is estimated that compliance is only about 50%.

The City of Newport Beach implemented a ban in 2011 and continues to struggle to enforce the ordinance, citing several factors including insufficient staffing to monitor and ensure compliance. Penalties in Newport Beach range from $100 - $500 for the first, second, and third offenses.

The majority of other bans on gas-powered leaf blowers in Southern California were enacted in the 1990s, and cities such as Claremont, whose ban was put in place in 1991, still struggle with enforcement and cite the same issues of staffing availability as well as gardeners reverting to gas-powered units, even at the risk of fines, due to the limits of electric powered alternatives.

Implementation and Enforcement:

A significant outreach and educational campaign will be required during the development of and prior to the implementation of a new ordinance. The majority of compliance will be voluntary and success will be strongly tied to education. A determination of the type of enforcement will need to be made, either an infraction or misdemeanor, and who the primary enforcement agency will be, either Code Enforcement, Police, or dedicated staff or contract services. Consideration of who would be held liable for violations should also be considered for cases where a contractor is performing service at a property or residence. Current staffing levels and workloads would make enforcement of

any form of leaf blower ban difficult and inconsistent.

Supportive Funding:

There are several existing programs that could be leveraged to financially support compliance with a ban, including:

1. The Residential Electric Lawn Mower Rebate Program- A program that allows residents to receive a rebate of up to $250 by purchasing a cordless, battery/electric lawn mower. An operable, gasoline-powered lawn mower must be forfeited for an individual to be eligible for the rebate.
2. The Commercial Electric Lawn and Garden Equipment Incentive & Exchange Program is available for commercial gardeners and landscapers, local government agencies, school districts and colleges, and non-profit organizations. Commercial lawn and garden equipment are available at a discounted price through pre-authorized dealerships. Equipment available through this program includes handheld trimmers, chainsaws, pruners, backpacks and handheld blowers, and ride-on, stand-on, walk-behind, and robotic lawnmowers. An equivalent operable gasoline or diesel-powered piece of lawn or garden equipment must be forfeited when the new battery-electric equipment is purchased.
3. California CORE has a voucher program to help offset the cost of replacing gas-powered landscaping equipment. The State has allocated $30M to facilitate the transition based on AB 1346 mandate.
4. Several cities have also developed internal programs to help fund the cost of converting from gas to electric for residents and commercial landscapers.

Options for City Council to consider:

The City Council may consider one or more of the following options.

1. Direct staff to prepare an ordinance to ban gas-powered leaf blowers; Prior to enforcing the new law, conduct community outreach and awareness campaigns via city website.
2. Direct staff to promote subsidies from existing programs by other agencies in official communications (including newsletters), at community events, and in any other manner deemed appropriate by City Staff. The programs to be promoted specifically could include:
    1. The Residential Electric Lawn Mower Rebate Program- A program that allows residents to receive a rebate of up to $250 by purchasing a cordless, battery/electric lawn mower. Residential Lawn Mower Rebate Program (aqmd.gov)
    2. The Commercial Electric Lawn and Garden Equipment Incentive & Exchange Program- which is available for commercial gardeners and landscapers, local government agencies, school districts and colleges, and non-profit organizations. Commercial Lawn and Garden Equipment (aqmd.gov)

3. California CORE voucher program to help offset the cost of replacing gas-powered landscaping equipment. The State has allocated $30M to facilitate the transition based on AB 1346 mandate. https://californiacore.org/

3. Research the feasibility of converting gas-powered leaf blowers used by city staff and city landscaping contractors to 100% electric by July 1, 2025, by leveraging eligible funds from the South Coast AQMDs Commercial Electric Lawn and Garden Equipment Incentive & Exchange Program.
4. Take no action at this time.

SUBMITTED BY:

Tabitha Crocker, Facilities and Community Services Director

REVIEWED BY:

Charles M. Duggan, Jr., City Manager
Yvette M. Abich-Garcia, City Attorney
Janice McConnell, Assistant City Manager
Chris Boatman, Assistant City Manager

City Council/Successor Agency Meeting **J. 5.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Discussion and possible action concerning a loan to Redlands Historical Museum Association for the construction of the Museum of Redlands (City Manager Duggan)

MOTION:

Should the City Council desire to approve the loan agreement as proposed by the Museum of Redlands/Redlands Historical Museum Association, the following motion is provided.

I move to approve the loan agreement with the Redlands Historical Museum Association for the construction of the Museum of Redlands.

RECOMMENDATION:

The City Council is requested to review the report and attachments.

DISCUSSION:

In 2014, the Redlands Historical Museum Association (RHMA) acquired the property located at 700 Brookside Avenue for the future site of the Museum of Redlands (MOR). Following this effort, the City Council passed Resolution 7445 in September 2014 agreeing to take possession of the museum once constructed and designated A.K. Smiley Library Board of Trustees as the future administrators. The City Council made these commitments based upon their finding that a historical museum serves a future public benefit by providing cultural enrichment to the Redlands community and contributes to the City's goals of enhancing tourism and economic development. Construction was divided into three phases and began in January 2021. Phase 1 included the renovation of the exterior of the main building (formerly the Redlands Daily Facts building). Phase 2 included the interior of the main building. Phase 3 included the Event Pavilion space just west of the main building.

On January 21, 2022, the City received a grant proposal from the President of the RHMA requesting a financial contribution from the City to be used to complete the construction of the Museum of Redlands. At the time, the total cost of the project was estimated to be approximately $26 million, creating a shortfall of $8 million from received fundraising contributions. At the April 19, 2022 meeting, City Council approved a grant agreement with RHMA for $1 million toward the construction of the museum.

Since then, the State of California approved a $2 million grant for the Museum of Redlands use. The initial budget appropriation was promoted by Assemblywoman Eloise Gomez Reyes, advocated for by A.K. Smiley Public Library Board Vice President Rosa Gomez and eventually signed by Governor Newsom. However, the funds have yet to be distributed. RHMA also secured a $1 million loan from the A.K. Smiley Public Library Endowment fund. A fundraising campaign brought in an additional $3.3 million from donors. These combined efforts brought the RHMA to within $730,000 of the $27 million revised total cost of the project.

Recently, Kasey Haws, representative of the Museum of Redlands (MOR), presented a proposal for a loan of $1 million by the City to RHMA with interest at 4% (based on the LAIF rate) to be repaid in 2 years (maturity date). The proposed loan agreement requires that the money be used for the Museum of Redlands project, RHMA would be responsible for complying with prevailing wage laws. Per the stipulations, RHMA may, but is not required to, make payments over the two-year period and may pre-pay the loan prior to the maturity date. A late fee of $5,000 could be assessed if principal and interest are not paid by the maturity date and interest continues to accrue until principal and interest is paid in full.

As proposed by RHNA/MOR, the loan agreement/Promissory Note would not be recorded against the MOR property; RHMA would not provide any collateral to secure the $1 million loan; RHMA would not provide a letter of credit to secure the $1 million loan; and RHMA would not provide a personal guarantee for the $1 million loan in case RHMA cannot pay the loan back to the City. Thus, the loan will be unsecured, which is not customary for a loan of this amount, and creates a level of risk for the City. RHMA's plan for repayment is to continue fundraising for the next 2 years to raise enough money to pay the City back by the maturity date. If MOR/RHMA is unable to pay back the loan, a remedy would be for the City to initiate litigation against RHMA to seek repayment of the loan in case of default.

Should the City Council approve the loan agreement and promissory note, staff would be authorized to issue a check payable to the Museum of Redlands in the amount of $1 million. An advance receivable in the same amount would be booked into the City's financial records. The City Council may also provide further direction to staff or take no action.

ALTERNATIVE:

The City Council may amend its prior grant agreement with RHMA and give an additional $1 million to RHMA for a total of $2 million.

SUBMITTED BY:
Charles M. Duggan, Jr. City Manager

REVIEWED BY:
Yvette M. Abich-Garcia, City Attorney
Janice McConnell, Assistant City Manager
Chris Boatman, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY: Jennifer Macias, Management Analyst

Fiscal Impact

Discussion:

The $1 million loan to the Museum of Redlands will be funded from the City's General Fund. An advance receivable in the same amount will be added to the City's general ledger to track the loan. The unassigned fund balance at June 30, 2024 is projected at $26,952,281.

Any interest revenue received will be deposited into the City's General Fund.

Attachments

Reso. No. 7445
Grant Agreement 4.19.2022
RHMA Loan Agreement (Draft)
Promissory Note (Draft)

RESOLUTION NO. 7445

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS RECONFIRMING THE BOARD OF TRUSTEES FOR THE A. K. SMILEY PUBLIC LIBRARY AS THE ADMINISTRATOR OF THE REDLANDS HISTORICAL MUSEUM, ESTABLISHING INTERIM AND PERMANENT IMPROVEMENT, REPAIR, OPERATIONAL, AND MAINTENANCE OBLIGATIONS FOR THE MUSEUM, AND RESCINDING RESOLUTION NO. 5800

WHEREAS, on January 28, 2000, the City Council of the City of Redlands authorized the formation of a committee to study the feasibility of establishing a historical museum; and

WHEREAS, on May 2, 2000, this City Council designated the City-owned building located at 30 Cajon Street as the site of the City's proposed museum; and

WHEREAS, on September 3, 2000, the City designated the A. K. Smiley Public Library as the repository for donated historical items until the proposed museum is established; and

WHEREAS, on October 3, 2000, this City Council adopted Resolution No. 5800 appointing the Library Board of Trustees as administrator of the proposed historical museum and identifying a source of revenue for maintenance of the proposed museum; and

WHEREAS, for the fourteen years since the Library Board of Trustees was appointed as administrator, the Board has worked closely with the Redlands Historical Museum Association to establish a historical museum which would subsequently be donated to the City; and

WHEREAS, on September 17, 2013, in response to a request from the Redlands Historical Museum Association for financial assistance associated with the establishment of the historical museum, this City Council unanimously approved payment for costs of landscape maintenance and the provision of utility services based upon the City Council's finding that the payment of such costs serves a valid public purpose because such payments will facilitate the opening, and initial operation, of a historical museum that will provide cultural enrichment to the Redlands community and contribute to the City's goals of enhancing tourism and economic development for the interim period until the museum is donated to the City; and

WHEREAS, recently members of the Library Board of Trustees and the Library Director have been informed, and have subsequently informed this City Council, that an anonymous philanthropic member of the Redlands community desires to make a generous donation to the Redlands Historical Museum Association for the specific purpose of establishing the proposed museum in the building located at 700 Brookside Avenue; and

WHEREAS, representatives of the Library Board of Trustees and the Library Director have participated in negotiations with the above-mentioned donor, the owners of the property located at 700 Brookside Avenue, and members of the Redlands Historical Museum Association to facilitate the location of the proposed Redlands Historical Museum on such property; and

WHEREAS, this City Council desires by this resolution to encourage and express its strong support for the above-mentioned donor's, the Library Board of Trustees' and the Redlands Historical Museum Association's efforts to cause the Redlands Historical Museum to be located at 700 Brookside Avenue;

NOW, THEREFORE, BE IT RESOLVED BY the City Council of the City of Redlands as follows:

Section 1. The City Council hereby designates the building and property located at 700 Brookside Avenue (the "Museum Property") as the site for the proposed Redlands Historical Museum.

Section 2. The City Council reconfirms the Board of Trustees of the A. K. Smiley Public Library as administrator of the proposed Redlands Historical Museum and the A. K. Smiley Public Library as the repository for donated items.

Section 3. As the administrator for the City of the proposed museum, the Library Board of Trustees shall have the responsibility for stewardship and oversight of the operations of the museum and its historical collections.

Section 4. In the event the Redlands Historical Museum Association acquires title to the Museum Property, upon the Association's occupancy of the building on the Museum Property for museum purposes, the City shall be responsible for funding the costs of providing utilities including all water, sewer, gas, light, power, and landscape irrigation and maintenance, reasonably required or necessary for the Museum Property. The City shall have no other responsibility, obligation or liability for the Museum Property.

Section 5. From and after the City obtaining title to the Museum Property, the City shall be responsible for funding the costs of providing utilities including all water, gas, light, power, telephone, internet access, and landscape irrigation and maintenance, and janitorial services, reasonably required or necessary for the operation of the museum.

Section 6. From and after the City obtaining title to the Museum Property, as the administrator of the museum, the Library Board of Trustees shall be responsible for securing funding to pay the costs of all structural capital improvements and repairs to the museum building and property, and all capital equipment and personal property, reasonably required or necessary for the operation of the museum.

ADOPTED, SIGNED AND APPROVED this 16th day of September, 2014.

Pete Aguilar, Mayor

ATTEST:

Sam Irwin, City Clerk

I, Sam Irwin, City Clerk, City of Redlands, hereby certify that the foregoing resolution was duly adopted by the City Council at a regular meeting thereof held on the 16th day of September, 2014, by the following vote:

AYES: Councilmembers Harrison, Foster, Gardner, Gilbreath; Mayor Aguilar
NOES: None
ABSENT: None
ABSTAIN: None

Sam Irwin, City Clerk

AGREEMENT BETWEEN THE CITY OF REDLANDS AND THE REDLANDS HISTORICAL MUSEUM ASSOCIATION, INC. FOR THE GRANT OF FUNDS FOR IMPROVEMENTS TO THE PROPOSED "MUSEUM OF REDLANDS"

This agreement ("Agreement") for the grant of City funds for improvements to the proposed "Museum of Redlands" is made and entered into this 19th day of April, 2022 ("Effective Date"), by and between the City of Redlands, a California municipal corporation and general law city ("City"), and the Redlands Historical Museum Association, Inc., a 501(c)(3) nonprofit corporation ("Grantee"). City and Grantee are sometimes individually referred to herein as a "Party" and, together, as the "Parties."

RECITALS

WHEREAS, Resolution No. 7445 of the City Council of the City of Redlands ("City Council") designated the Board of Trustees of City's A.K. Smiley Public Library as the administrator of the proposed "Museum of Redlands" and established interim and permanent improvement, repair, maintenance and operational obligations for City and the Board of Trustees, both before and after the City might obtain title to the property located at 700 Brookside Avenue; and

WHEREAS, the City Council is in receipt of a grant proposal submitted by the Redlands Historical Museum Association, Inc. which requests funding for the completion of certain improvements associated with the construction of the proposed "Museum of Redlands;" and

WHEREAS, City has found and determined that the provision of funds to Grantee for the improvements to the "Museum of Redlands" serves a public purpose for the reason that the funds will facilitate the opening of a historical museum that will provide cultural enrichment to the Redlands community and contribute to the City's goals of enhancing tourism and economic development; and

WHEREAS, on February 15, 2022, the City Council authorized the grant of One Million Dollars ($1,000,000) ("Grant Funds") for the improvements to the "Museum of Redlands;"

NOW, THEREFORE, in consideration of the mutual promises contained herein, the Parties agree as follows:

AGREEMENT

Section 1. Grant. City hereby grants to Grantee the sum of One Million Dollars ($1,000,000) (the "Grant Funds") pursuant to the request of Grantee set forth in its grant proposal, which is attached hereto as Exhibit "A" and incorporated herein by this reference. City shall disburse the Grant Funds to Grantee on or before May 1, 2022.

Section 2. Restrictions on Use of Funds. Grantee warrants and represents that the Grant Funds shall not be used for any activity that would violate City, state, or federal statutory or decisional law, and shall be expended solely for improvements Grantee proposes to make to the "Museum of Redlands," as more particularly described in Exhibit "A" (the "Improvement Work").

In the event the Grant Funds are not used for the Improvement Work, Grantee shall provide written notification to City and shall return the Grant Funds in full to City within ten (10) days of such notice. If the Grant Funds are not fully expended by or before April 19, 2024, Grantee shall return the unexpended Grant Funds to City within thirty (30) days of such date.

Section 3. Compliance with California Labor Code. In performing the Improvement Work, Grantee shall comply with all applicable federal, state, and local laws, including, but not limited to, any applicable provisions of the California Labor Code. City makes no representation to Grantee as to whether the Improvement Work constitutes a "Public Work" as that term is defined by California Labor Code section 1720, and Grantee acknowledges and agrees that Grantee shall be solely responsible and liable for the determination of whether such Improvement Work constitutes a "Public Work." Grantee further acknowledges and agrees that City's sole obligation under this Agreement is to provide Grantee with the Grant Funds, and that City is not an awarding authority for any contract entered into by Grantee for the Improvement Work, nor is City otherwise undertaking any "Public Work" for purposes of California Labor Code section 1781. Grantee shall defend, indemnify, and hold harmless City and its elected and appointed officials, officers, and employees from and against any and all losses, damages, costs, claims, causes of action and liability based upon the assertion that City or Grantee has failed to comply with any applicable provision of the California Labor Code in connection with Grantee's undertaking of the Improvement Work.

Section 4. Reporting and Accounting Requirements.

A. Grantee shall maintain true, proper, and complete books, records and accounts (collectively, "Books and Records") in which shall be entered fully and accurately all transactions taken with respect to the Improvement Work and the expenditure of the Grant Funds. Grantee shall maintain the Books and Records in accordance with Generally Accepted Accounting Principles.

B. City reserves the right to designate its employee representatives, or its contracted representatives with a Certified Public Accounting firm, who shall have the right to audit Grantee's Books and Records as they relate to the Grant Proposal, and to examine any cost, revenue, payment, claim or other records or supporting documentation relating to Grantee's use and expenditure of the Grant Funds. Any such audit shall be undertaken by City or its representatives at mutually agreed upon reasonable times, and in conformance with generally accepted auditing standards. Grantee agrees to fully cooperate with any such audit.

C. City's right to audit shall extend for a period of three (3) years following the date of City's provision of the Grant Funds to Grantee. Grantee agrees to retain all records and documentation relating to the Grant Proposal and Grantee's expenditure of the Grant Funds for such period.

Section 5. Indemnification. To the fullest extent permitted by law, Grantee shall indemnify, defend and hold harmless City, and its elected and appointed officials, officers, employees and agents, (collectively, the "Indemnified Parties") from and against any and all claims (including, without limitation, claims for bodily injury, death or damage to property), demands, obligations, damages, actions, causes of action, suits, losses, judgements, fines, penalties,

liabilities, costs and expenses (including, without limitation, attorney's fees, disbursements and court costs) of every kind and nature whatsoever (individually, a "Claim;" collectively, "Claims"), which may arise from or in any manner relate (directly or indirectly) to this Agreement and Grantee's undertaking of the Improvement Work (including the negligent and/or willful acts, error and/or omission of Grantee, its principals, officers, agents, employees, vendors, suppliers, consultants, subcontractors, anyone employed directly or indirectly by any of them or for whose acts they may be liable for any or all of them). Notwithstanding the foregoing, nothing herein shall be construed to require Grantee to indemnify the Indemnified Parties from any Claim arising from the sole negligence or willful misconduct of the Indemnified Parties. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by Grantee.

Section 6. Grantee Independence. In the performance of this Agreement, Grantee, and the employees and agents of Grantee, shall act in an independent capacity and are not officers, employees, or agents of City. The manner and means of performing the Improvement Work are under the control of Grantee, except to the extent they are limited by statute, rule, or regulation and the express terms of this Agreement. Nothing in this Agreement shall be deemed to constitute approval for Grantee, or any of Grantee's employees or agents, to be the employees or agents of City. Grantee shall have the responsibility for, and control over, the means of performing the Improvement Work. Anything in this Agreement that may appear to give City the right to direct Grantee as to the details of the performance or to exercise a measure of control over Grantee shall mean only that Grantee shall follow the desires of City with respect to the results of the Improvement Work.

Section 7. Prohibition against Transfers. Grantee shall not assign or transfer this Agreement, directly or indirectly, by operation of law or otherwise, without the prior written consent of City. Any attempt to do so without such written consent of City shall be null and void.

Section 8. Notices. Any notice or other communication required, or which may be given, pursuant to this Agreement, shall be in writing. Any such notice shall be deemed delivered (i) on the date of delivery in person; (ii) five (5) days after deposit in first class registered mail, with return receipt requested; (iii) on the actual delivery date if deposited with an overnight courier; or (iv) on the date sent by facsimile or electronic mail transmission (including PDF), if confirmed with a copy sent contemporaneously by first class, certified, registered or express mail; in each case properly posted and fully prepaid to the appropriate address set forth below, or such other address as a Party may provide notice in accordance with this section:

CITY OF REDLANDS

City Clerk
City of Redlands
35 Cajon Street
P.O. Box 3005 (mailing)
Redlands, CA 92373
jdonaldson@cityofredlands.org
(909) 798-7531

REDLANDS HISTORICAL MUSEUM ASSOCIATION

Stephen Stockton, President
PO Box 470
Redlands, CA 92375
stevepaul1938@gmail.com
(951) 966-0047

Section 9. General Considerations.

A. Waiver. A waiver by either Party of any breach, or of any term, covenant, or condition contained herein, shall not be deemed to be a waiver of any subsequent breach of the same or any other term, covenant, or condition contained herein, whether of the same or a different character.

B. Entire Agreement. This Agreement represents the full and complete understanding of every kind or nature whatsoever between the Parties with respect to its subject matter, and all preliminary negotiations and agreements of whatsoever kind or nature relating to the same are merged herein. No verbal agreement or implied covenant shall be held to vary the provisions herein.

C. Interpretation. The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either Party by reason of the authorship of the Agreement or any other rule of improvements which might otherwise apply.

D. Amendment. This Agreement may be modified or amended only by a written document executed by both Grantee and City.

E. Severability. If any term or provision of this Agreement is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of this Agreement shall continue in full force and effect.

F. Controlling Law and Venue. The Agreement shall be governed by and construed in accordance with the laws of the State of California, without regard to its conflicts of laws provisions. The Parties agree that all actions or proceedings arising in connection with this Agreement shall be tried and litigated only in the state courts located in San Bernardino County, California, and the federal courts located in Riverside County, California.

G. Equal Opportunity Employment. Grantee represents that it is an equal opportunity employer, and it shall not discriminate against any contractor, employee, or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex or age.

H. Attorney's Fees. In the event any action is commenced to enforce or interpret any term or provision of this Agreement, the prevailing Party in such action, in addition to costs and any other relief, shall be entitled to the recovery of its reasonable attorneys' fees, including fees for a Party's use of in-house counsel.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of its Effective Date.

CITY OF REDLANDS

Paul T. Barich, Mayor

REDLANDS HISTORICAL MUSEUM ASSOCIATION, INC.

Stephen P. Stockton, President

ATTEST

Jeanne Donaldson, City Clerk

EXHIBIT "A"

GRANT PROPOSAL



January 21, 2022,
City of Redlands
30 Cajon Street
Redlands, CA 92373

Via: E-mail

Attention, Charlie Duggan, City Manager

Dear Charlie,
A vision twenty-two years in the making is about to happen! Redlands will have by the end of this year a new cultural, historical, educational "Living Room"! Redlands' residents will have a place that provides ongoing context and inspiration for years to come.

In 2000, the old city hall was promised by the city as the Museum site; even signs were put up. The Great Recession killed that dream. That site was needed for police services. Three other potential sites were explored but became unavailable. Then, through the generosity of a private donor, the former Daily Facts Building at Brookside Avenue and Center Street was given to the Museum. We chose our name to be the Museum of Redlands. The Museum will lead visitors through the rich history of Redlands by way of interactive exhibits, lectures, art, and music, but also involve significant space for travelling exhibits from other museums, all of which will provide an ongoing opportunity for residents and visitors alike to return repeatedly. The design developed by well-known architects Johnson/Favaro, (most recently of the new Riverside Library), creates an iconic landmark in Redlands that represents our time and our gift to future citizens.

The early documents between the City and MOR anticipated that the city, near the completion of the project, would become an active partner with MOR, both financially and operationally. We are currently funded with private donations. These private funds came from four major donors and more than 800 additional donors who have contributed almost $18 million. The total project cost is projected to be between $24 and $26 million. NOW is the City's time to assist in completing MOR. With a contribution of $6.6 million, the city would be presenting its citizens with a new cultural asset. This amount includes contingencies, MOR soft costs and will complete the interior of MOR. It does not include prevailing wages. The attached document details MOR's cash flow from January 1, 2022, through April 2022. The document also details a short fall of cash for current construction which is dependent on pledges and additional fund raising by the MOR. This could require a reimbursement agreement with the city as funds become available.

MOR will join with a new City Hall, a new Police Headquarters, and new Fire Stations. Culture and education join "civic hands" with public safety and administrative services, all to serve the people of Redlands in the 21st Century and beyond. We look forward to your favorable approval with advanced "thanks" for keeping our mutual project on time.

Sincerely,

Stephen P. Stockton
President, Museum of Redlands
CC: Chris Boatman, Don McCue, Tim Rochford, Char Burgess
Attachment

Redlands Historical Museum Association
Capital Funds Projection
As of April 30, 2022

				Capital Fund Expenditures
			Building & Lot Purchase	1,563,312
			Tilden Coil Constructors Spent prior to 12/31/21	8,453,424
Funds available at 12/31/2021	**5,245,550**		Additional costs including architect and other misc expenses prior to 12/31/21	1,307,038
January 2022 Pledges Receivable/Donations	135,548		Subtotal Expenditures prior to 12/31/21	11,323,774
January Projected Costs	(2,875,000)	*	January Projected Costs	2,875,000 *
January 2022 Funds Balance	**2,506,098**			
Feburary 2022 Pledges Receivable	22,500			
February Projected Costs	(2,600,000)	*	February Projected Costs	2,600,000 *
February 2022 Funds Balance	**(71,402)**			
March 2022 Pledges Receivable	600,000			
March Projected Costs	(1,750,000)	*	March Projected Costs	1,750,000 *
March 2022 Funds Balance	**(1,221,402)**			
April Projected Costs	(463,000)	*	April Projected Costs	463,000 *
April 2022 Funds Balance	**(1,684,402)**		Projected Capital Funds Expenditures to April 2022	**19,011,774**

No assurance is provided on this statement.

Additional Estimated Fund Contributions after April 2022	
Estimated sale of 300 pavers at $2,500 each	750,000
Estimated additional pledges receivable	1,500,000
Does not include monthly donations	
Estimated Cost for Final Phase of Construction	6,600,000

* These projected expenditures are from the General Contractor Tilden-Coil Constructors, Inc as well as estimated expenses for other contractors such as Johnson Favaro, River City Testing, etc. Does not include general operating expenditures.

No assurance is provided on this statement.

LOAN AGREEMENT

This Loan Agreement ("Agreement") is made and entered into this _____day of _____, 20___ ("Effective Date"), by and between the CITY OF REDLANDS, a California municipal corporation and general law city ("City"), and the REDLANDS HISTORICAL MUSEUM ASSOCIATION, a California nonprofit public benefit corporation ("Borrower"). City and Borrower are sometimes individually referred to herein as a "Party" and, together, as the "Parties."

RECITALS

WHEREAS, Borrower has requested that the City make a loan to the Borrower in the amount of One Million Dollars ($1,000,000) to provide funding for the completion of certain improvements associated with the construction of the proposed "Museum of Redlands;"

WHEREAS, City has found and determined that the loaning of funds to Borrower for the improvements to the "Museum of Redlands" serves a public purpose for the reason that the funds will facilitate the opening of a historical museum that will provide cultural enrichment to the Redlands community and contribute to the City's goals of enhancing tourism and economic development; and

NOW, THEREFORE, in consideration of the mutual promises contained herein, the Parties agree as follows:

AGREEMENT

Section 1. Loan. City hereby loans to Borrower the sum of One Million Dollars ($1,000,000) (the "Loan"). The Loan shall be evidenced by that certain Promissory Note dated as of the date hereof, in the form attached hereto as Exhibit "A" and incorporated herein by this reference (the "Note"). The terms of the Loan, including the interest rate, the terms of repayment, and the maturity date, shall be as set forth in the Note.

Section 2. Restrictions on Use of Loan Funds. Borrower warrants and represents that the Loan shall not be used for any activity that would violate city, state, or federal statutory or decisional law, and shall be expended solely for improvements Borrower proposes to make to the "Museum of Redlands," as more particularly described in Exhibit "B" (the "Improvement Work").

Section 3. Representations and Warranties. As an inducement to City to execute this Agreement and to disburse the proceeds of the Loan, Borrower represents and warrants to City that the following statements set forth in this Section 3 are true, correct, and complete in all material respects as of the date hereof and will be true, correct, and complete in all material respects until the Loan is paid in full:

a) Borrower is a nonprofit public benefit corporation, duly organized and validly existing under the laws of the State of California, and is qualified to transact business in the State of California and in each jurisdiction where it is required to conduct its operations, and is in good standing in the State of California;

b) Borrower is an organization exemption from taxation under Section 501(c)(3) of the Internal Revenue Code;

c) The execution, delivery and performance of this Agreement, the Note and any other documents entered into in connection with the Loan (collectively, the "Loan Documents") by Borrower are within the Borrower's powers and have been duly authorized by all necessary action by Borrower;

d) The Loan Documents have been duly executed by Borrower, and are legally valid and binding obligations of Borrower, enforceable against Borrower in accordance with their terms, except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general principles of equity; and

e) The execution, delivery and performance of the Loan Documents by Borrower will not violate (i) Borrower's articles of incorporation or bylaws; (ii) any legal requirement affecting Borrower or any of its properties; or (iii) any agreement to which Borrower is bound or to which it is a party and will not result in or require the creation (except as provided in or contemplated by any of the Loan Documents) of any lien upon any of such properties.

Section 4. Compliance with California Labor Code. In performing the Improvement Work, Borrower shall comply with all applicable federal, state, and local laws, including, but not limited to, any applicable provisions of the California Labor Code. City makes no representation to Borrower as to whether the Improvement Work constitutes a "Public Work" as that term is defined by California Labor Code section 1720, and Borrower acknowledges and agrees that Borrower shall be solely responsible and liable for the determination of whether such Improvement Work constitutes a "Public Work." Borrower further acknowledges and agrees that City's sole obligation under this Agreement is to provide Borrower with the Loan, and that City is not an awarding authority for any contract entered into by Borrower for the Improvement Work, nor is City otherwise undertaking any "Public Work" for purposes of California Labor Code section 1781. Borrower shall defend, indemnify, and hold harmless City and its elected and appointed officials, officers, and employees from and against any and all losses, damages, costs, claims, causes of action and liability based upon the assertion that City or Borrower has failed to comply with any applicable provision of the California Labor Code in connection with Borrower's undertaking of the Improvement Work.

Section 5. Reporting and Accounting Requirements.

a) Borrower shall maintain true, proper, and complete books, records, and accounts (collectively, "Books and Records") in which shall be entered fully and accurately all transactions taken with respect to the Improvement Work and the expenditure of the Loan. Borrower shall maintain the Books and Records in accordance with Generally Accepted Accounting Principles.

b) City reserves the right to designate its employee representatives, or its contracted representatives with a Certified Public Accounting firm, who shall have the right to audit Borrower's Books and Records as they relate to the Loan, and to examine any cost, revenue, payment, claim or other records or supporting documentation relating to Borrower's use and expenditure of the Loan. Any such audit shall be undertaken by City or its representatives at mutually agreed upon reasonable times, and in conformance with generally accepted auditing standards. Borrower agrees to fully cooperate with any such audit.

c) City's right to audit shall extend for a period of three (3) years following the date of City's provision of the Loan to Borrower. Borrower agrees to retain all records and documentation relating to the Borrower's expenditure of the Loan for such period.

Section 6. Event of Default. The occurrence of any of the following shall be deemed to be a default hereunder (each an "Event of Default"):

a) failure by Borrower to pay any monetary amount when due under the Note or any other Loan Document;

b) any other default or breach of any of the terms, provisions, and obligations of the Borrower or any guarantor pursuant to any Loan Document, and such default or breach is not cured by Borrower and/or any guarantor within thirty (30) days from the receipt of written notice thereof from Lender.

Section 7. Remedies. Notwithstanding any provision to the contrary herein or any of the other Loan Documents, during a continuance of any Event of Default under this Agreement or any of the other Loan Documents, then Lender shall, at its option, have the remedies provided in the Loan Document breached by Borrower, including, without limitation, the option to declare all outstanding indebtedness to be immediately due and payable without presentment, demand, protest or notice of any kind, and Lender may exercise all rights and remedies available to it under any or all of the Loan Documents or under applicable law.

Section 8. Indemnification. To the fullest extent permitted by law, Borrower shall indemnify, defend, and hold harmless City, and its elected and appointed officials, officers, employees and agents, (collectively, the "Indemnified Parties") from and against any and all claims (including, without limitation, claims for bodily injury, death or damage to property), demands, obligations, damages, actions, causes of action, suits, losses, judgements, fines, penalties, liabilities, costs and expenses (including, without limitation, attorney's fees, disbursements and court costs) of every kind and nature whatsoever (individually, a "Claim;" collectively, "Claims"), which may arise from or in any manner relate (directly or indirectly) to this Agreement and Borrower's undertaking of the Improvement Work (including the negligent and/or willful acts, error and/or omission of Borrower, its principals, officers, agents, employees, vendors, suppliers, consultants, subcontractors, anyone employed directly or indirectly by any of them or for whose acts they may be liable for any or all of them). Notwithstanding the foregoing, nothing herein shall be construed to require Borrower to indemnify the Indemnified Parties from any Claim arising from the sole negligence or willful misconduct of the Indemnified Parties. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by Borrower.

Section 9. Borrower Independence. In the performance of this Agreement, Borrower, and the employees and agents of Borrower, shall act in an independent capacity and are not officers, employees, or agents of City. The manner and means of performing the Improvement Work are under the control of Borrower, except to the extent they are limited by statute, rule, or regulation. Nothing in this Agreement shall be deemed to constitute approval for Borrower, or any of Borrower's employees or agents, to be the employees or agents of City. City shall not be liable to any contractor, subcontractor, supplier, laborer, architect, engineer, or any other party for

services performed or materials supplied in connection with the Improvement Work. City shall not be liable for any debts or claims accruing in favor of any such parties against Borrower or others or against the Improvement Work or the premises where any such Improvement Work is performed. Borrower is not and shall not be an agent of City for any purpose. City is not a joint venture partner with Borrower or with any person having an ownership or other interest in Borrower in any manner whatsoever.

Section 10. Assignment. Borrower shall not assign or transfer this Agreement, directly or indirectly, by operation of law or otherwise, without the prior written consent of City. Any attempt to do so without such written consent of City shall be null and void.

Section 11. Notices. Any notice or other communication required, or which may be given, pursuant to this Agreement, shall be in writing. Any such notice shall be deemed delivered (i) on the date of delivery in person; (ii) five (5) days after deposit in first class registered mail, with return receipt requested; (iii) on the actual delivery date if deposited with an overnight courier; or (iv) on the date sent by facsimile, if confirmed with a copy sent contemporaneously by first class, certified, registered or express mail; in each case properly posted and fully prepaid to the appropriate address set forth below, or such other address as a Party may provide notice in accordance with this section:

CITY OF REDLANDS
City Manager

City of Redlands
300 East State Street, Suite 690
P.O. Box 3005 (mailing)
Redlands, CA 92373

REDLANDS HISTORICAL MUSEUM ASSOCIATION

c/o Mundell, Odlum & Haws, LLP
650 E. Hospitality Lane, Suite 470
San Bernardino, California 92408

Section 12. General Considerations.

a) Waiver. A waiver by either Party of any breach, or of any term, covenant, or condition contained herein, shall not be deemed to be a waiver of any subsequent breach of the same or any other term, covenant, or condition contained herein, whether of the same or a different character.

b) Entire Agreement. This Agreement represents the full and complete understanding of every kind or nature whatsoever between the Parties with respect to its subject matter, and all preliminary negotiations and agreements of whatsoever kind or nature relating to the same are merged herein. No verbal agreement or implied covenant shall be held to vary the provisions herein.

c) Interpretation. The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either Party by reason of the authorship of the Agreement or any other rule of improvements which might otherwise apply.

DRAFT

d) Amendment. This Agreement may be modified or amended only by a written document executed by both Borrower and City.

e) Severability. If any term or provision of this Agreement is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of this Agreement shall continue in full force and effect.

f) Controlling Law and Venue. The Agreement shall be governed by and construed in accordance with the laws of the State of California, without regard to its conflicts of law provisions. The Parties agree that all actions or proceedings arising in connection with this Agreement shall be tried and litigated only in the state courts located in San Bernardino County, California, and the federal courts located in Riverside County, California.

g) Equal Opportunity Employment. Borrower represents that it is an equal opportunity employer, and it shall not discriminate against any contractor, employee, or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex, age or on any other basis prohibited by law.

h) Attorney's Fees. In the event any action is commenced to enforce or interpret any term or provision of this Agreement, the prevailing Party in such action, in addition to costs and any other relief, shall be entitled to the recovery of its reasonable attorneys' fees, including fees for a Party's use of in-house counsel.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of its Effective Date.

CITY OF REDLANDS

By: _____
Eddie Tejeda, Mayor

ATTEST

_____
Jeanne Donaldson, City Clerk

REDLANDS HISTORICAL MUSEUM ASSOCIATION

By: _____
_____, President

By: _____
_____, Secretary

DRAFT

EXHIBIT A

FORM OF PROMISSORY NOTE

[Attached]

DRAFT

EXHIBIT B

DESCRIPTION OF IMPROVEMENT WORK

Remaining construction and related services needed to finalize completion of the museum building and landscaping.

DRAFT

PROMISSORY NOTE

$1,000,000.00 _____, 2024

FOR VALUE RECEIVED, REDLANDS HISTORICAL MUSEUM ASSOCIATION, a California nonprofit public benefit corporation (the "Borrower") promises to pay to the order of the CITY OF REDLANDS, a California municipal corporation and general law city (the "Lender") in lawful money of the United States of America at its offices located at 300 East State Street, Suite 690, P.O. Box 3005 (mailing), Redlands, CA 92373, or at such other location as the Lender may designate from time to time, the principal sum of One Million Dollars ($1,000,000.00) (the "Loan"), together with interest accruing on the unpaid principal balance at a rate of four percent (4%) per annum from the date hereof, all as provided below.

1. **PAYMENTS**. The full balance of this Note, including all principal, accrued interest and late fees, is due and payable on the second anniversary of the date of this Note, hereinafter known as the "Maturity Date." The Loan shall be due and payable in one (1) lump sum to be made in full, principal and interest included, by the Maturity Date.

2. **LATE FEE**. If the Borrower fails to pay all principal, interest or other amounts coming due pursuant to the provisions of this Note on or before the Maturity Date, the Borrower also shall pay to Lender a late payment fee of $5,000.00, together with the default interest due as described in Section 3.

3. **INTEREST DUE IN THE EVENT OF DEFAULT**. In the event the Borrower fails to pay this Note in full on or before the Maturity Date, the unpaid principal shall accrue interest at the maximum rate allowed by law until this Note has been paid in full.

4. **ALLOCATION OF PAYMENTS**. Payments shall be first credited to any late fees due, then to interest due, and any remainder will be credited to principal.

5. **PREPAYMENT**. Borrower may prepay this Note, in whole or in part, without penalty. In no event shall Borrower be entitled to re-borrow any amounts prepaid.

6. **EVENT OF DEFAULT.** The occurrence of any of the following shall be deemed to be a default hereunder:

(a) failure by Borrower to pay any monetary amount when due under this Note;

(b) an Event of Default as such term is defined in that certain Loan Agreement dated as of the date hereof between Borrower and Lender.

7. **ACCELERATION**. If the Borrower is in default under this Note, then Lender may, at its option, declare all outstanding sums owed on this Note to be immediately due and payable.

DRAFT

8. **ATTORNEYS' FEES AND COSTS**. Borrower shall pay all costs incurred by Lender in collecting sums due under this Note after a default, including reasonable attorneys' fees. If Lender or Borrower sues to enforce this Note or obtains a declaration of its rights hereunder, the prevailing party in any such proceeding shall be entitled to recover its reasonable attorneys' fees and costs incurred in the proceeding (including those incurred in any bankruptcy proceeding or appeal) from the non-prevailing party.

9. **WAIVERS**. Borrower hereby waives diligence, demand for payment, presentment for payment, protest, notice of nonpayment, notice of protest, notice of intent to accelerate, notice of acceleration, notice of dishonor, and all other notices or demands of any kind (except notices specifically provided for in this Note or the Loan Agreement, if any). Borrower waives to the full extent permitted by law, the right to plead any and all statutes of limitations and/or any defenses relating to marshaling of assets as a defense.

10. **NON-WAIVER**. No failure or delay by Lender in exercising Lender's rights under this Note shall be considered a waiver of such rights.

11. **SEVERABILITY**. In the event that any provision herein is determined to be void or unenforceable for any reason, such determination shall not affect the validity or enforceability of any other provision, all of which shall remain in full force and effect.

12. **INTEGRATION**. There are no verbal or other agreements which modify or affect the terms of this Note. This Note may not be modified or amended except by written agreement signed by Borrower and Lender.

13. **CONFLICTING TERMS**. The terms of this Note shall control over any conflicting terms in any referenced agreement or document.

14. **TIME IS OF THE ESSENCE**. Time is of the essence with regard to each provision of this Note as to which time is a factor.

15. **NOTICE**. Any notices required or permitted to be given hereunder shall be given in writing and shall be delivered (a) in person, (b) by certified mail, postage prepaid, return receipt requested, or (c) by a commercial overnight courier that guarantees next day delivery and provides a receipt, and such notices shall be made to the parties at the following addresses:

City of Redlands, Attn: City Manager
300 East State Street, Suite 690
P.O. Box 3005 (mailing)
Redlands, California 92373

Redlands Historical Museum Association, c/o Mundell, Odlum & Haws, LLP
650 E. Hospitality Lane, Suite 470
San Bernardino, California 92408

16. **EXECUTION**. The Borrower executes this Note as a principal and not as a surety.

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17. GOVERNING LAW. This Note shall be governed under the laws in the State of California.

REDLANDS HISTORICAL MUSEUM ASSOCIATION, a California nonprofit public benefit corporation

By:_____
Name: _____
Title: President

By:_____
Name: _____
Title: Secretary

DRAFT

City Council/Successor Agency Meeting **K. 1.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Public Hearing to consider the following applications for the Lugonia Village residential project located at the northwest corner of West Lugonia Avenue and Karon Street (APNs 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000) within the Specific Development (EV/SD) District of the East Valley Corridor Specific Plan, by applicant Redlands Summit, LLC.
(Mayor to declare meeting open as a public hearing)

A. **Reso No. 8551 - Mitigated Negative Declaration and Socio-Economic Cost/Benefit Study** prepared for the project in accordance with Section 15074 of the California Environmental Quality Act and Measure "U."
B. **Reso No. 8552 - General Plan Amendment No. 143** - A request to amend the General Plan land use designation of approximately 17.9 acres from Commercial to High Density Residential (up to 27 dwelling units per acre), and amend the land use designation of approximately one acre from Parks/Golf Course to High Density Residential (up to 27 dwelling units per acre).
C. **Reso No. 8553 - Specific Plan Amendment No. 40 Amendment No. 48** - A request to amend the East Valley Corridor Specific Plan (Specific Plan No. 40) to remove 24.4 acres from the boundaries of East Valley Corridor Specific Plan area.
D. **Ordinance No. 2960 (Zone Change No. 469)** - A request to change the zoning designation of the 24.4 gross acre project site to 18.89 gross acres of High Density Residential (R-3) District and 5.51 gross acres to Single Family Residential (R-1) District for development purposes.
E. **Reso. No. 8554 - Tentative Parcel Map No. 20469** - A request to subdivide the entire project site into three parcels (3.38 net acres, 4.75 net acres, and 14.48 net acres in size) for development purposes and further subdivision with tentative tract maps; and approval of **Commission Review**

and Approval No. 941 to construct a 451-unit multifamily apartment complex fronting along Lugonia Avenue, including parking, landscaping, open space, recreation areas, and related onsite and frontage improvements.

F. **Reso. No. 8555 - Tentative Tract Map No. 20490** - A request to subdivide 3.47 net acres into 20 lots, ranging in size from 5,995 to 10,518 sq. ft., with 18 numbered lots for single-family residential development, one lettered lot utilized as a private park, and one lettered lot for stormwater facilities; and approval of **Commission Review and Approval No. 940** to construct a total of 18 single family homes fronting Karon Street and related onsite and frontage improvements.

G. **Reso. No. 8556 - Tentative Tract Map No. 20491** - A request to subdivide Parcel 1 of Tentative Parcel Map No. 20469 map for condominium purposes, to be utilized for the development of 72 residential townhomes (condominium airspace units plus common lots); and approval of **Commission Review and Approval No. 942** to construct a 72-unit townhouse development fronting along a proposed extension of Pennsylvania Avenue, includes parking, landscaping, open space, recreation areas, and related onsite and frontage improvements.

H. **Reso. No. 8557** - A Density Bonus and Inclusionary Housing Agreement requested for the project, pursuant to California Government Code section 65915 et seq. and in accordance with Redlands Municipal Chapter 18.230 (Inclusionary Housing).

(Development Services Director Desatnik)

MOTION(S):

If the City Council determines that the Planning Commission's recommendation is appropriate, the following motions are provided:

1. I move that the City Council adopt Resolution Nos. 8551, 8552, and 8553, to approve the Mitigated Negative Declaration with mitigation monitoring and reporting program, approve the Socio-Economic Cost/Benefit Study, and approve the Specific Plan Amendment for the Lugonia Village residential project.

2. Mayor requests the City Clerk to read the title of Ordinance No. 2960;

   I move to waive further reading of, and to introduce, Ordinance No. 2960.

3. I move that the City Council adopt Resolution Nos. 8554, 8555, 8556, and 8557 to approve the subdivision maps and Commission Review & Approval permits for the Lugonia Village residential project.

RECOMMENDATION:

On January 23, 2024, the Planning Commission reviewed the proposed project and voted 6 to 0 adopting resolutions making recommendations that the City Council approve the following actions:

- Adopt a Mitigated Negative Declaration and Mitigation Monitoring & Reporting Program for the proposed project;
- Approve the Socio-Economic Cost/Benefit Study prepared for the project;
- Approve General Plan Amendment No. 143;
- Approve Amendment No. 48 to Specific Plan 40;
- Approve Zone Change No. 469;
- Approve Tentative Parcel Map No. 20469;
- Approve Tentative Tract Map Nos. 20490 and 20491;
- Approve Commission Review & Approval Nos. 940, 941, and 942; and,
- Approve the Density Bonus and Inclusionary Housing Agreements for the project.

DISCUSSION:

I. Proposed Project Description

The applicant proposes to develop the 24.4-gross acre project site with 541 residential units, comprised of three distinct neighborhoods created through three separate subdivisions: a 451-unit multiple family apartment community, a 72-unit townhouse community, and 18 single-family homes along Karon Street. The project site is located on the north side of West Lugonia Avenue, south side of a proposed extension of Pennsylvania Avenue, and west side of Karon Street (see Attachment A – Location Map and Aerial Photo). A key element of the proposed plan includes the extension of Pennsylvania Avenue from Karon Street to Tennessee Street (a distance of approximately 1,647 feet) to provide vehicle and pedestrian access to the townhome development. More importantly, it will allow for adequate drainage, water, and sewer services to be provided to the townhomes.

The apartment development consists of 11 three-story buildings and two recreational buildings with primary access from one signalized entrance on West Lugonia Avenue (see Attachment B-1 – Site Plan). The townhome development consists of 72 two-story attached duplex homes located on private drive aisles with access from a driveway on a proposed extension of Pennsylvania Avenue (see Attachment B-2 – Site Plan). The 18 one-story detached single-family

homes will be built on Karon Street, which will buffer the existing single-family neighborhood to the east from the new apartment and townhome development (see Attachment B-3 – Site Plan). Summary details are provided below. Additional detailed analysis of the project is contained in the Planning Commission staff report (see Attachment C) and further in this report (within each section for Commission Review & Approval).

In order to construct the proposed project, the applicant proposes several legislative applications, including a General Plan Amendment, Specific Plan Amendment, Zone Change, and Density Bonus Agreement.

- **General Plan Amendment:** change the General Plan land use designation of approximately 17.9 acres from Commercial to “High Density Residential” and change the land use designation of approximately one acre from Parks/Golf Courses to “High Density Residential.” Approximately 3.5 acres of the project site on the east side fronting Karon Street is currently designated as Low Density Residential and will not change.
- **Specific Plan Amendment:** amend the East Valley Corridor Specific Plan (Specific Plan 40) land use map to remove the entire 24.4-acre project site from the Special Development (EV/SD) District.
- **Zone Change:** amend the Zoning Map to designate the multi-family development area as “Multiple Family Residential (R-3) District” and designate single-family development area as “Single Family Residential (R-1) District” in accordance with RMC Title 18 (Zoning Regulations).
- **Density Bonus:** total of 28 residences within the apartment community would be restricted for rental only to Very Low-income households, as defined. Therefore, the project is eligible for a Density Bonus and concessions and waivers pursuant to State Density Bonus Law (Gov. Code § 65915 et seq.). Pursuant to Government Code § 65915(d)(1), a requested concession or incentive shall be granted unless the City makes written findings, based on substantial evidence of any of the following: (1) the concession or incentive does not result in identifiable and actual cost reductions to provide the proposed affordable housing, (2) the concession or incentive would have a specific, adverse impact on public health and safety, or on any real property listed on the California Register of Historical Resources, and for which there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact without rendering the project unaffordable to low-income and moderate-income households, or (3) the concession or incentive would be contrary to state or federal law.

  The applicant has requested concessions that include: modification of the requirement for landscape islands within parking lots for the apartment development (i.e., where otherwise landscaped islands would be required at a rate of one per every 20 adjacent parking spaces), and a waiver of specified development standards pertaining to interior yards, setbacks, and building separation requirements within the R-3 zone. It should be noted that the reduced standards for the number of parking spaces required per dwelling unit is not considered a concession or incentive under Gov. Code

§ 65915(d) Gov. Code § 65915(p) is a separate subsection that provides the mandated parking ratio per dwelling unit for Density Bonus projects.

State Density Bonus Law also constrains the ability to deny requested waivers. Government Code § 65915(e)(1) restricts the City from applying development standards that would physically preclude the construction of a development entitled to a density bonus at the increased density or with the concessions/incentives, unless the City makes findings that the waiver would have a specific, adverse impact on public health or safety (as defined by State law in Gov. Code § 65589.5) and there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact.

II. Background

The project site currently consists of vacant and unimproved land. Historic aerial surveys indicate that the site previously supported agricultural uses (citrus groves); however, agricultural use of the property ceased in 1984.

2021-2029 Housing Element: The City's new 2021-2029 Housing Element was certified by the California Department of Housing & Community Development (HCD) on September 26, 2022. State Law requires it to: include housing programs that identify adequate sites to accommodate the jurisdiction's share of the Regional Housing Needs Allocation (RHNA); assist in the approval of housing for Very Low- and Low-income households; and remove or mitigate governmental constraints that inhibit building more affordable housing.

Housing Crisis Act of 2019: The Housing Crisis Act of 2019, also referred to as Senate Bill 330 (SB 330), became effective on January 1, 2020. SB 330 imposes several limitations on cities and counties with regard to proposed housing development projects, including the provisions listed below.

- The City may conduct no more than five (5) hearings on the project (including any Commission or Board meetings, workshops, subcommittee meetings, etc.).
- Requires any disapproval of a project that complies with objective General Plan and zoning standards (or approve it on the condition that it be developed at a lower density) to base its decision upon written findings supported by substantial evidence in the record and places the burden of proof on the local agency.
- Prohibits the City from changing the zoning or development standards that would: change the allowable land use to a less intensive use or reducing the intensity of use below that which was in effect on January 1, 2018; impose or enforce a moratorium on housing development within all or a portion of the jurisdiction of the city; and, impose or enforce new design standards established on or after January 1, 2020, that are not objective design standards, as defined.

III. Analysis

A) General Plan

Existing Land Use Designation: The majority of the subject site is located within the Commercial land use designation (see Attachment D-1, Existing General Plan Land Use Map) which supports certain types of commercial and light industrial uses such as auto services, other commercial retail and services, and manufacturing. Other land use designations are also currently in place on the property: Low Density Residential (up to 6.0 dwelling units per acre) for the easterly strip of the project site fronting Karon Street; and a small (approximately 1 acre) circular portion of land with the Parks/Golf Courses land use designation. Surrounding land use designations include Commercial to the north, the east. With the decline of commercial development, certain areas, including the project site, have been identified in the City's 2021-2029 Housing Element and its housing sites inventory as properties suitable for higher-density residential development. Approval of the project will be consistent with several policies and goals in the Housing Element.

General Plan Amendment: The project proposes a residential density of 27.2 units per acre, which exceeds the allowable residential density of the Commercial land use designation. In order to implement the proposed residential project, a General Plan Amendment is proposed (see Attachment D-2, Proposed General Plan Land Use Map) to change the land use designation of approximately 17.9 acres of Commercial and approximately one acre of Parks/Golf Courses areas to High Density Residential. The High Density Residential land use designation allows up to 27 dwelling units per acre, plus State-mandated density bonuses where applicable. This Amendment would eliminate all portions of the Parks/Golf Courses land use designation within the project area.

As the project site has the Commercial land use designation on three sides (north, south, and west), the preservation of the Low Density Residential designation along Karon Street provides an appropriate physical buffer between the lower-density single-family neighborhoods directly to the east and northeast of the project site.

Conformance with General Plan Policies: The project, including the proposed General Plan Amendment, is consistent with a number General Plan policies, goals, and programs as analyzed in the table contained in Attachment E. These policies and goals include those which promote buffers between commercial uses, transitions between low-density and high-density residential uses, siting of high-density projects near regional shopping centers, rezoning land identified on the housing sites inventory to a higher density, promote a variety of housing types and densities, and single-family residential development, among others.

B) Current Zoning Designation

The property is currently located in the Special Development (EV/SD) District of the East Valley Corridor Specific Plan (see Attachment F-1, Existing Zoning Map) which is intended to permit administrative/professional, commercial or industrial developments, or a mixture of such uses. The EV/SD District generally does not allow residential uses (except that single-family residential is allowed as a buffer use, which is not applicable in this case). The proposed Specific Plan Amendment will remove the entire 24.4-gross acre project site from East Valley Corridor Specific Plan. A Zone Change is proposed that will establish zoning districts that are consistent with the proposed General Plan Amendment for the project.

C) Zone Change No. 469

To allow for the proposed project, the applicant is proposing to change the zoning designation for 18.89 gross acres to "High Density Residential (R-3) District" and change 5.51 gross acres to "Single Family Residential (R-1) District" (see Attachment F-2, Proposed Zone Change). In it's recommendation for approval of the zone change on January 23, 2024, the Planning Commission found that the proposed Zone Change will be consistent with the proposed General Plan Amendment and is related to the public health, safety, or general welfare.

D) Overall Site Plan

The project proposes three distinct development types, as follows: a single-family detached neighborhood on approximately 3.5 acres on the east side (fronting along Karon Street); an attached townhome neighborhood on approximately 4.75 acres on the north side (fronting the extension of Pennsylvania Avenue); and an apartment community on 14.48 acres in the middle and south sides (fronting Lugonia Avenue). Each development has its own entitlement as described further in the following sections.

Traffic: In accordance with Measure U, a traffic study was prepared for the project (Attachment G), to evaluate the potential for transportation impacts resulting from the project. The study analyzed existing conditions without the project, existing conditions with the project, and recommended improvements. The traffic study specifies specific roadway and site access improvements to be included in the project:

- Half-width construction along W. Lugonia Ave., Pennsylvania Ave., and Karon Street project frontages.
- Construct a one-way-stop control at the new intersection of Tennessee Street and the extension of Pennsylvania Avenue; east leg of the intersection is to be full-width improvement.

- Construct a one-way-stop controlled driveway to create a new T-intersection at W. Lugonia Avenue, west of New York Street.
- Construct a signal-controlled driveway at the intersection of W. Lugonia Ave. and New York St./Project Driveway, with signal modifications to accommodate a new North intersection leg.

As shown in the study, the addition of the proposed project with the above improvements does not degrade the Levels of Service below the current Levels of Service grade. Therefore, the proposed project is forecast to result in no substantial transportation effects at the study intersections and no other improvements are required.

E) Tentative Parcel Map

Tentative Parcel Map No. 20469 (Attachment H-1) will subdivide the site into three numbered parcels for development purposes. Each parcel will each have its own distinct residential development and an accompanying tentative tract map. Parcel 1 fronts the Pennsylvania Avenue extension, will be used for condominium purposes, is the intended location of the townhome community, and is approximately 4.75-acres in size; Parcel 2 fronts Karon Street, will be used for the development of the single family homes, and is approximately 3.38 net acres in size; Parcel 3 fronts West Lugonia Avenue, will be used for apartment purposes and is 14.48-acres in size. All necessary access and improvements are required for each parcel. Site design and access details are provided further in the report, in the sections for each different residential community.

F) Commission Review & Approval No. 940 and Tentative Tract Map No. 20490 (Detached Single Family Development)

Tentative Tract Map No. 20490 (Attachment H-2) will subdivide the proposed Parcel 2 (3.38 acres) of Tentative Parcel Map No. 20469 into a total of 20 lots. The 18 residential lots will range in size between 5,995 to 10,518 square-feet for 18 single-family dwelling units, with one lettered lot for a privately-owned pocket park (10,518 square feet in size), and one lettered lot for stormwater facilities. An accompanying Commission Review & Approval permit is requested for design review and site plan approval by the Planning Commission, including architectural design review.

Site Access and Circulation: The single-family residential community is proposed as a total of 18 single family homes, ranging in size from 1,520 sq. ft. to 1,690 sq. ft., fronting Karon Street. single family homes, ranging in size from 1,520 sq. ft. to 1,690 sq. ft., fronting Karon Street. Each home takes direct access from Karon Street (classified as a residential collector street) and is provided a 20-foot wide driveway that leads to a two-car garage.

Design: The architectural design concept for the single-family homes is contemporary in nature (see Attachment I-1, Single Family Architectural Typicals), and is intended to assist in the visual transition between the existing single-family neighborhoods (to the east of the project site) and the more modern architectural design of the higher-density portions of the project to the west. Two product types are proposed: Type A with 3 bedrooms, and Type B with 4 bedrooms. Three different floor plans are provided for the 3-bedroom units, each with a similar but distinctive architecture.

Landscaping, Recreation Space, and Walls: Landscape details are shown on the landscape plan (see Attachment J-1). The landscape planting palette consists of a combination of trees, shrubs, and groundcover. Front yard landscaping will be installed for each unit prior to certificates of occupancy for each unit. Additional open space is provided within a 10,518-square foot private pocket park. This space is designated for use only by the residents of the single-family homes along Karon Street. Amenities include a decomposed granite (DG) path enclosing a turf area, and benches.

All required walls and fences are provided, including a 6-foot tall decorative split-face block wall at the rear of the neighborhood (see Attachment J-2, Fence and Wall Plan).

G) Commission Review & Approval No. 941 (Apartment Development)

Site Design, Access and Circulation: The proposed apartment development is sited on Parcel 3 of Tentative Parcel Map, the largest of the parcels at 14.48-acres in size. The development consists of 11 three-story buildings and two recreation buildings. The buildings are arranged around a central linear park and the common open space amenities. Ground-level garages and surface parking lots are placed behind the U-shaped buildings and around the perimeter of the site.

Site access is provided via two secure entry points: 1) a signalized main entrance located at the intersection of West Lugonia Avenue and New York Street, and 2) a secondary driveway at the southwest corner of the site. In addition, the main entry provides enhanced pedestrian access and decorative paving in the public parking area. A number of 30-foot-wide drive aisles ensure adequate access throughout the site to all parking, trash service areas, and firefighting apparatus.

Design: The architectural design of the apartment community can be described as having a more contemporary style, and incorporates elements that are reminiscent of mid-century modern designs (see Attachment I-2, Apartment Elevations). Architectural features are present along the Lugonia Avenue street frontage that will activate the street scene to create a vibrant, urban, and pedestrian-scaled environment. This includes porches and balconies, street-facing windows, and open tower elements.

Landscape, Fences and Walls: A combination of trees, shrubs and groundcover is employed throughout the site. All required landscape yards and landscape areas are proposed within the site, including front yard landscaping and parking lot screening areas (see Attachment J-1, Landscape Plans). In order to achieve the necessary slopes for drainage, masonry retaining walls are proposed around the perimeter of the site, which allow the development areas closest to the streets to be brought to street level (see G-2 – Conceptual Grading Plan). The tallest walls are at the center and rear of the site, where they are approximately 6 feet high (see Attachment J-2, Wall and Fence Plans). A decorative split-face perimeter wall encloses the site, except along the Lugonia Avenue frontage, where a tubular steel fence allows open views onto the buildings and areas beyond. All walls and fences required by the Redlands Municipal Code will be provided.

Recreation Amenities: Two recreational buildings are provided: a 3,168 square-foot fitness center and a clubhouse building 8,596 square-feet in size, with an adjacent pool deck with cabanas. The pool, cabanas, and clubhouse will allocate space for the leasing center and for residents of the community to enjoy active recreation, and a space to host small or informal gatherings.

Building No. 10 (adjacent to the fitness center and pool area) provides a ground-level children's play area where people can bring their family for freeplay and creative activities supervised by adults. Within the central greenbelt, a meandering pedestrian path connects open turf and park areas that include barbeques, shade lattice structures, and seating amenities. Two pocket parks are proposed, inclusive of a “tot lot” located near the fitness center and pool area. All required amenities and open space areas (common and private) have been provided.

H) Commission Review & Approval No. 942 and Tentative Tract Map No. 20491 (Townhome Condominium Development)

Tentative Tract Map No. 20491 (Attachment H-3) will subdivide the proposed Parcel 1 (4.75 acres) of Tentative Parcel Map No. 20469 for condominium purposes, into a total of 72 lots. The townhomes are designed as a series of attached duplexes placed around a central recreation and amenity area, accessed by a circular private drive aisle, with branch-offs that terminate in “auto courts.” The street of the townhome community is designed with features along the street frontage that will activate the street to create a vibrant, urban, and walkable environment. This includes private front yard courtyards, and street-facing windows.

Site Access and Circulation: A 30-foot-wide central driveway with decorative paving provides vehicular and pedestrian access from the proposed Pennsylvania Avenue extension. Private interior drive aisles 26-feet in width provide access to private garages and entryways for homes.

Waiver of Building Separation Requirements: Pursuant to State Density Bonus Law, in order to achieve the maximum permitted density proposed under the General Plan Amendment, the applicant is requesting a reduction (concession) of the building separation requirements contained in RMC Section 18.60.160. This request for concession is included in the proposed Density Bonus Agreement. The project proposes to have minimum building separations of 10 feet, and drive aisle setback of approximately 2 feet, which are less than what the code would otherwise require.

Design: Architecture for the townhomes is the most contemporary among the three neighborhoods, and has a modern style based on clean lines, flat roofs, and basic forms in earth tones (see Attachment I-3, Townhome Elevations).

Landscape, Recreational Amenities: A combination of trees, shrubs and groundcover is employed throughout the site (see Attachment J-1, Landscape Plans). All required landscape yards and landscape areas are proposed within the site, including front yard landscaping. Various walls and fences are also proposed (see Attachment J-2, Wall and Fence Plans). Two pocket parks are provided on the south side of the project, which may include barbeques, corn hole/bocce ball, fire pits, or seating amenities. A pool and pool deck with an accompanying recreation building 374-square feet in size is provided at the center of the community for use by the residents.

I) Density Bonus Agreement and Inclusionary Housing Plan

Density Bonus Incentives and Concessions: The applicant has requested a density bonus in accordance with California State law. The City requires approval of a Density Bonus Agreement for all density bonus applications. Such agreement(s) require the approval of the City Council. A density bonus granted to a residential development project shall consist of an increase over the otherwise maximum allowable residential density under the applicable zoning ordinance and land use element of the City's General Plan as of the date of application. In this case, the applicant is requesting that the apartment and townhome units be constructed at an ultimate density of 27.2 units per acre, which would otherwise exceed the maximum allowable density of 27.0 dwelling units per acre. The proposal would be consistent with the density proposed for this site in the 2021-2029 Housing Element for higher-density housing and affordable housing.

Inclusionary Housing Plan: RMC Chapter 18.230 requires any Residential Development that includes ten (10) or more units to provide affordable housing, as defined. The applicant has submitted an Inclusionary Housing Plan (see Attachment K-1) in conjunction with their applications for discretionary approvals. The applicant intends to fulfill the inclusionary housing obligations by providing 28 Very Low Income apartment units. Staff has reviewed the proposal and it will meet code requirements. Additional discussion is provided in the

Planning Commission staff report (Attachment C). A single agreement is proposed that will satisfy both the requirements of State Density Bonus Law and the City's Inclusionary Housing Program. The proposed Agreement is provided as Attachment K-2.

J) Socio-Economic Cost/Benefit Study

In accordance with the provisions of the Principles of Management Development within the Redlands General Plan, the project was required to undergo a Socio-Economic Cost Benefit study (Attachment L). The study recommends that the project will not create an unmitigable physical blight or overburden public services in the community because project design features described in the Initial Study/Mitigated Negative Declaration, and incorporated in the Socio-Economic Cost Benefit Study will reduce effects to a less than significant level. According to the cost/benefit model used by the City, upon full buildout this project will provide the City approximately $578,377 in annual revenue and annual costs of $372,710. This will result in a positive balance of $205,667 annually (or a combined positive cost/benefit ratio of +1.55) for years 2025 through 2034.

K) Findings

Project findings are included within the attached resolutions (see Attachment N).

ENVIRONMENTAL REVIEW

The City hired a qualified environmental consulting firm to prepare an Initial Study (Attachment M-1) in accordance with the California Environmental Quality Act (CEQA). In accordance with the CEQA Guidelines, the Initial Study/Mitigated Negative Declaration (IS/MND) was made available for public review and comment for 30 days (State Clearinghouse No. 2023120124). A Notice of Intent was filed with the County Clerk on December 5, 2023, and with the State Clearinghouse. The IS/MND was circulated for 30 days between December 6, 2023, and January 4, 2024. The public review Initial Study and Mitigated Negative Declaration was also made available via the City's website. One public comment letter was received from Omnitrans requesting that the City require the construction of a bus landing and bus pad on the north side of West Lugonia Avenue, between Karon Street and the signalized New York Street intersection. This request has been made a condition of approval for the project as permitted by the Redlands Municipal Code.

Mitigation Measures: The Initial Study recommends a Mitigated Negative Declaration with 14 mitigation measures that pertain to Biological Resources, Geological Resources, Transportation, Cultural Resources, and Tribal Cultural Resources. All mitigation measures will ensure that any environmental effects are less than significant. After mitigation, no significant effects were identified as a result of the project, and the recommended mitigation measures will be

incorporated into the project as mandatory Conditions of Approval. The document also includes a Mitigation Monitoring & Reporting Program (MMRP) (see Attachment M-2). Lastly, the City's environmental consultant has assembled the public comments and prepared Responses to Comments (see Attachment M-3).

ALTERNATIVES:

1. The City Council may continue the public hearing and direct staff to address any issues or bring back additional information; or,
2. The City Council may continue the public hearing and direct staff to prepare findings for denial of the request.

STRATEGIC PLAN:

Not applicable.

SUBMITTED BY:

Brian Desatnik, Development Services Director

RECOMMENDED BY:

Charles M. Duggan Jr., City Manager

REVIEWED BY:

Yvette M. Abich Garcia, City Attorney
Janice McConnell, Assistant City Manager
Christopher Boatman, Assistant City Manager
Danielle Garcia, Management Services/Finance Director

PREPARED BY:

Ryan Murphy, Senior Planner

Fiscal Impact

Fiscal Year: 23-24

Revenue Generating: No

Appropriation Required Y/N: No

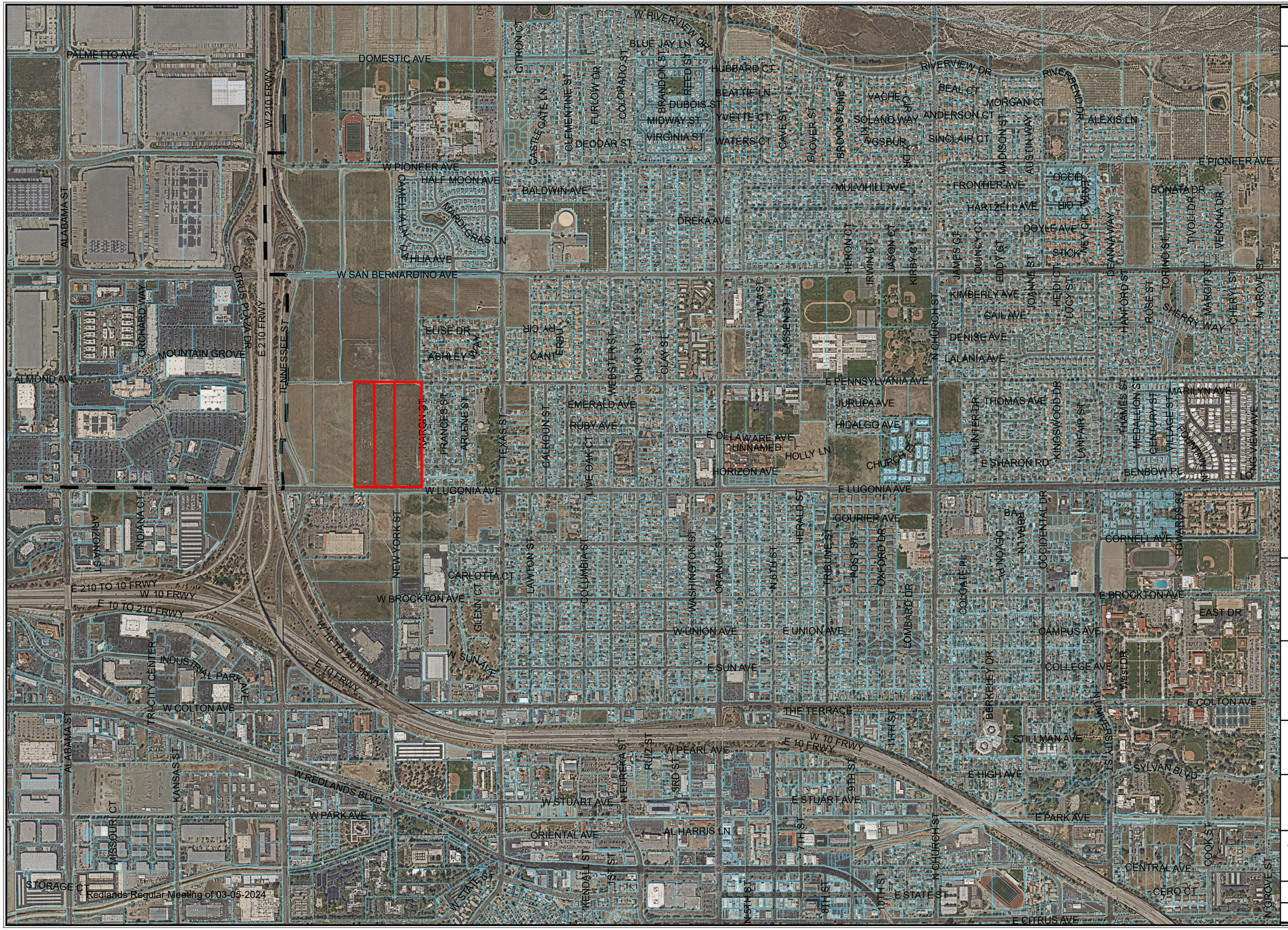
Discussion:

The applicant paid the required application fees needed to process the entitlements. The developer would be required to pay the appropriate City development impact fees as well as applicable school fees. These development impact fees represent the developer's fair share of planned facilities. Therefore, there are no fiscal impacts.

Attachments

Attachment A - Location Map and Aerial Photo
Attachment B-1 - Site Plan (Apartments)
Attachment B-2 - Site Plan (Townhomes)
Attachment B-3 - Site Plan (Single Family Homes)
Attachment C - Planning Commission Staff Report of Jan. 23, 2024
Attachment D-1 - General Plan Land Use Map (existing)
Attachment D-2 - Proposed General Plan Amendment
Attachment E - Table of General Plan Policies
Attachment F-1 - Zoning Map (existing)
Attachment F-2 - Proposed Zone Change
Attachment G - Traffic Study
Attachment H-1 - Tentative Parcel Map 20469
Attachment H-2 - Tentative Tract Map No. 20490
Attachment H-3 - Tentative Tract Map No. 20491
Attachment I-1 - Architectural Elevations (single-family homes)
Attachment I-2 - Architectural Elevations (apartments)
Attachment I-3 - Architectural Elevations (townhomes)
Attachment J-1 - Preliminary Landscape Plan
Attachment J-2 - Fence and Wall Plans
Attachment K-1 - Inclusionary Housing Plan
Attachment K-2 - Lugonia Village Density Bonus Agreement
Attachment L - Socio-Economic Cost/Benefit Study
Attachment M-1 - Initial Study/Mitigated Negative Declaration
Attachment M-2 - Mitigation Monitoring & Reporting Program
Attachment M-3 - Public Comments, Response to Comments, and Errata

Attachment N-1 - Resolution 8551 (CEQA and Socio-Economic Study)
Attachment N-2 - Resolution 8552 (General Plan Amendment)
Attachment N-3 - Resolution 8553 (Specific Plan Amendment)
Attachment N-4 - Ordinance No. 2960 (Zone Change)
Attachment N-5 - Resolution 8554 (TPM 20469 and CRA 941)
Attachment N-6 - Resolution 8555 (TTM 20490 and CRA 940)
Attachment N-7 - Resolution 8556 (TTM 20491 and CRA 942)
Attachment N-8 - Resolution 8557 (Density Bonus & Inclusionary Housing Agreement)



Location Map

This map was produced by the City of Redlands, Geographic Information System.
The City of Redlands assumes no warranty or legal responsibility for the information contained on this map.
The data used to generate this map is dynamic in nature, therefore the information shown may or may not be the most current.

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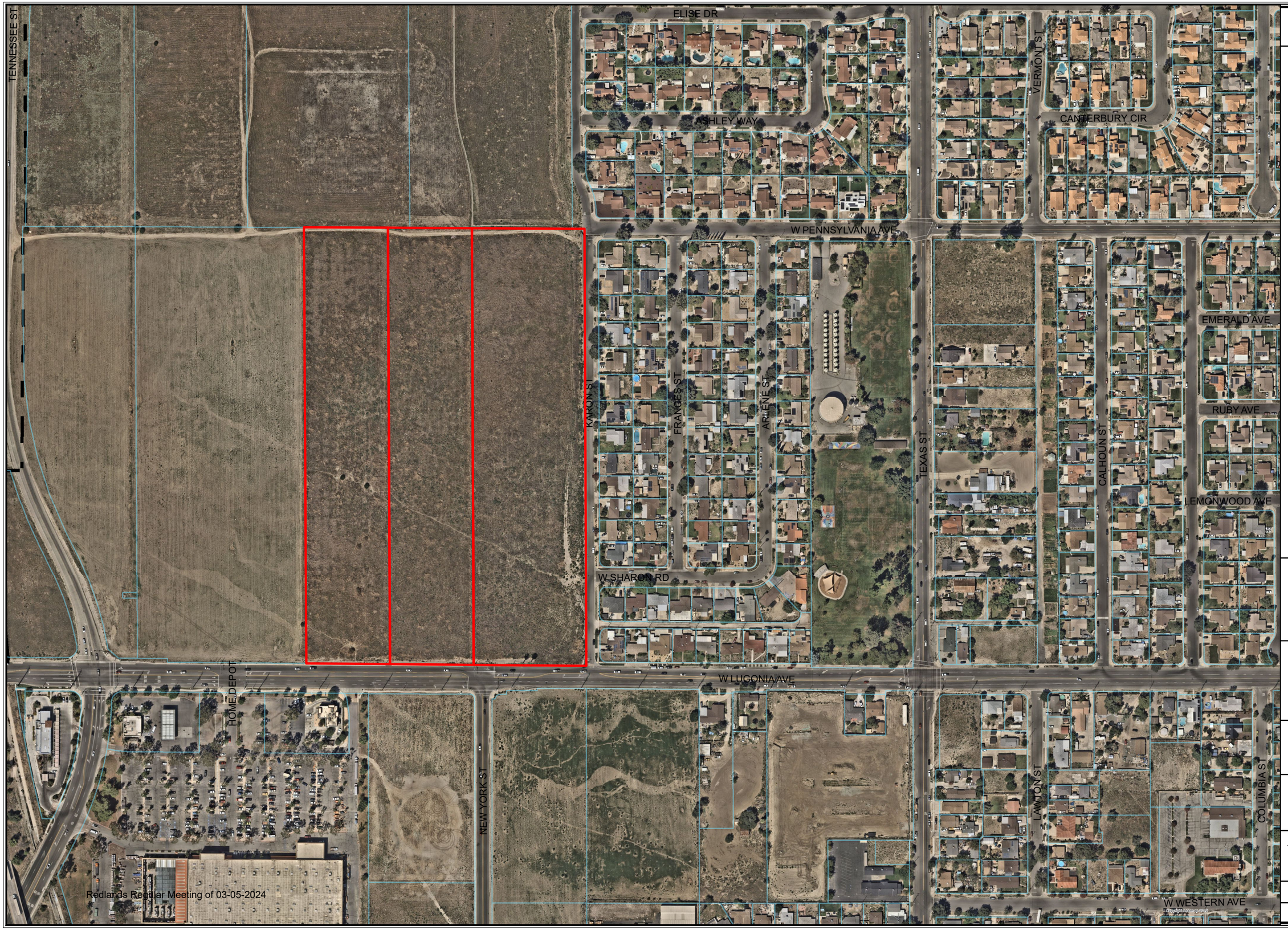
City of Redlands
Department of Innovation & Technology
Geographic Information Systems

City of REDLANDS "A City That Works"

January 17, 2024

OneStop.mxd



Aerial Photo

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The City of Redlands assumes no warranty or legal responsibility for the information contained on this map.
The data used to generate this map is dynamic in nature, therefore the information shown may or may not be the most current.

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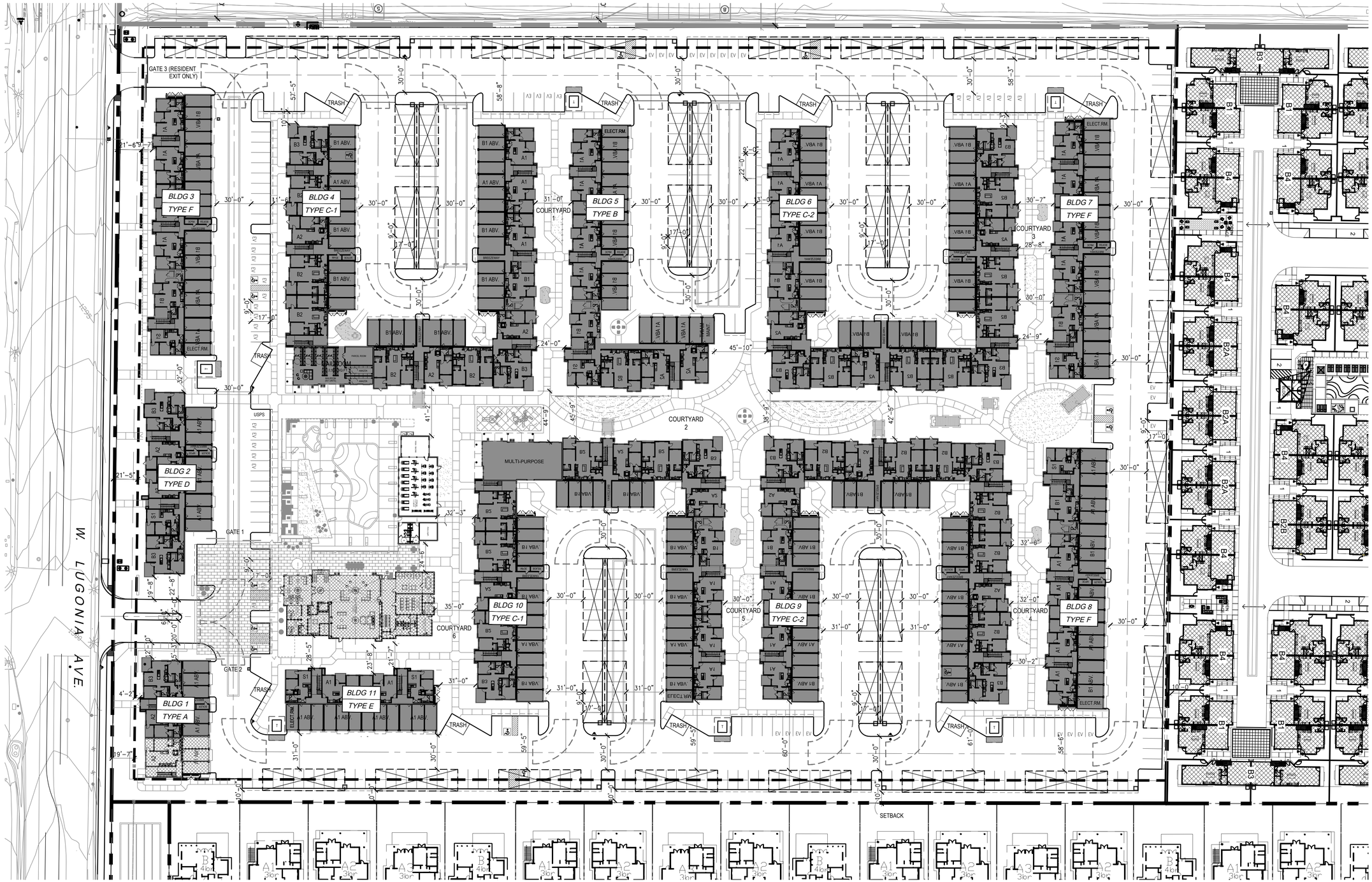
City of Redlands
Department of Innovation & Technology
Geographic Information Systems

City of REDLANDS "A City That Works"

January 17, 2024

OneStop.mxd



1 STORY

2 STORY

3 STORY

NORTH

1"=40'-0" 0 20' 40' 80' 120'

SCALE = 1:40

APN: 0167-171-04-0000
0167-171-05-0000
0167-171-06-0000

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

MULTI-FAMILY SITE PLAN - 451UNITS

DATE: 06-05-2023
JOB NO.: 2021-046

M-1.1

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

archi² group

Wednesday, June 28, 2023 5:21:59 PM
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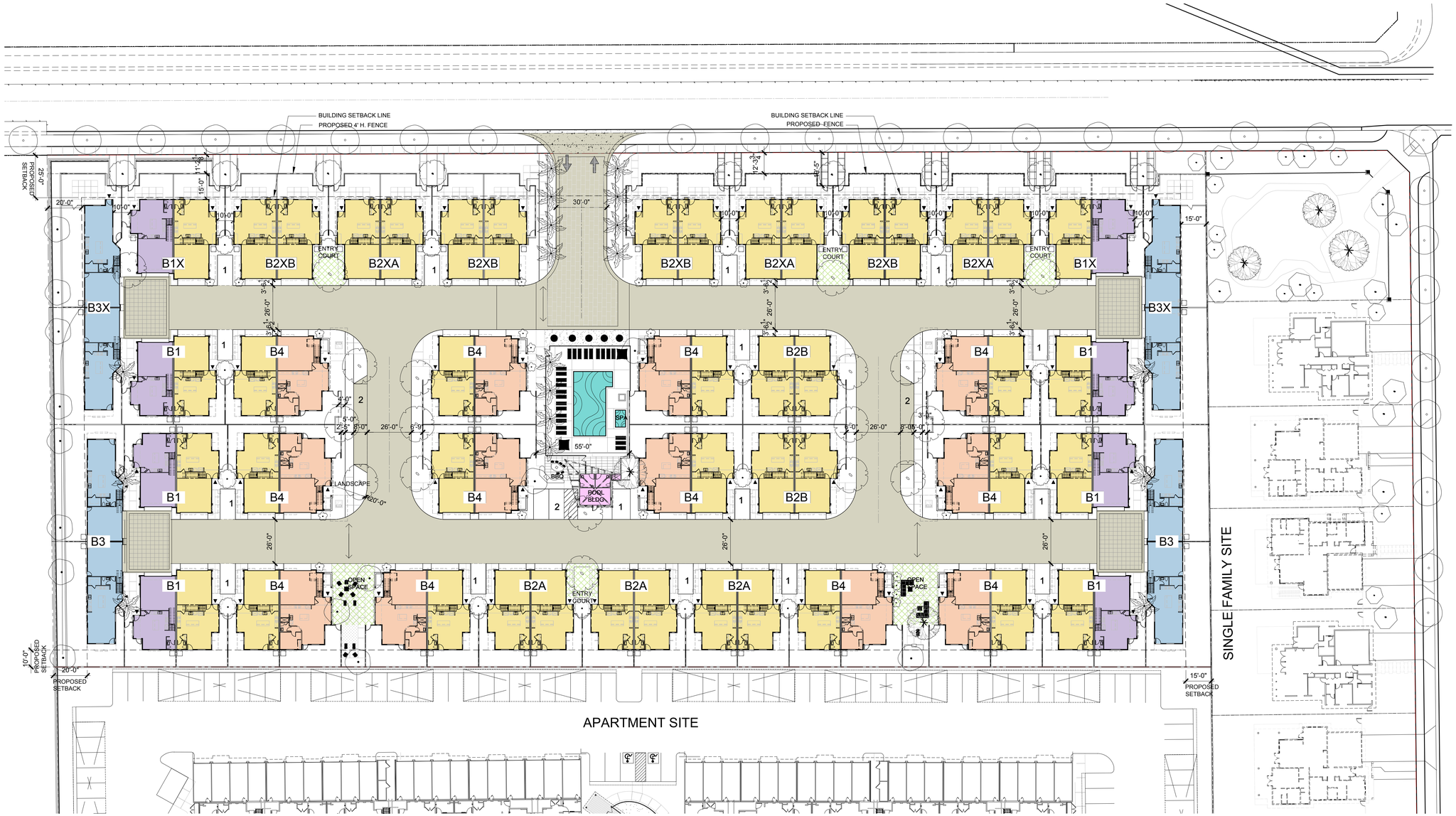


NEIGHBORHOOD SUMMARY

TOTAL UNITS: 72 UNITS
TOTAL BUILDINGS: 36 RESIDENTIAL BUILDINGS + 1 POOL BUILDING

UNIT SUMMARY:

UNIT TYPE	COUNT	SQ FT
3 BD, 2.5 BA	8	1,381
3 BD, 2.5 BA, LOFT	43	1,746
4 BD, 2.5 BA	8	1,937
4 BD, 3 BA, LOFT	13	1,983
TOTAL	72	127,401

BUILDING SUMMARY:

BLDG TYPE	COUNT	SQ FT
B1	6	3,125
B1X	2	3,125
B2	5	3,488
B2X	7	3,488
B3	2	3,874
B3X	2	3,874
B4	12	3,728
POOL BUILDING	1	374
TOTAL	37	127,462

MAX. NO. OF STORY: 2
BUILDING HEIGHT: 28 FT +/-

PARKING:

	REQUIRED	PROVIDED	TYPE
2 PER UNIT:	144	144	GARAGES
GUEST (.25/UNIT):	18	21	OPEN
TOTAL:	162	165	SPACES
PARKING RATIO:	2.25 SPACES / DU		

COMMON AREA:

PROVIDED:	SQ FT
POOL & SPA AREA:	5,367
VARIOUS OPEN AREAS:	3,376
TOTAL	8,743

OPEN SPACE:

REQUIRED:
LIVABLE SQ FT: 127,401
x 25%
31,850 REQUIRED OPEN SPACE

PROVIDED:
PRIVATE: 23,286
COMMON: 8,743
32,029 PROVIDED

1"=30'-0" 0 15' 30' 60' 90'

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

SITE PLAN

DATE: 06-05-2023
JOB NO.: 2207

PH-1.2.1

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NEIGHBORHOOD "C"



STREET VIEW FROM NORTH-EAST @ KARON ST.

PROJECT SUMMARY

ZONING; R1

PROPOSED SUBDIVISION: 18 LOTS
5 LOTS - 62.0'X120.0' (4BR UNITES)
13 LOTS - 60.0'X120.0' (3BR UNITS)

PROPOSED UNITS: 18 SINGLE FAMILY DWELLINGS

PARKING: 2 CARS PER DWELLING REQUIRED
ATTACHED 2 CAR GARAGE PROVIDED

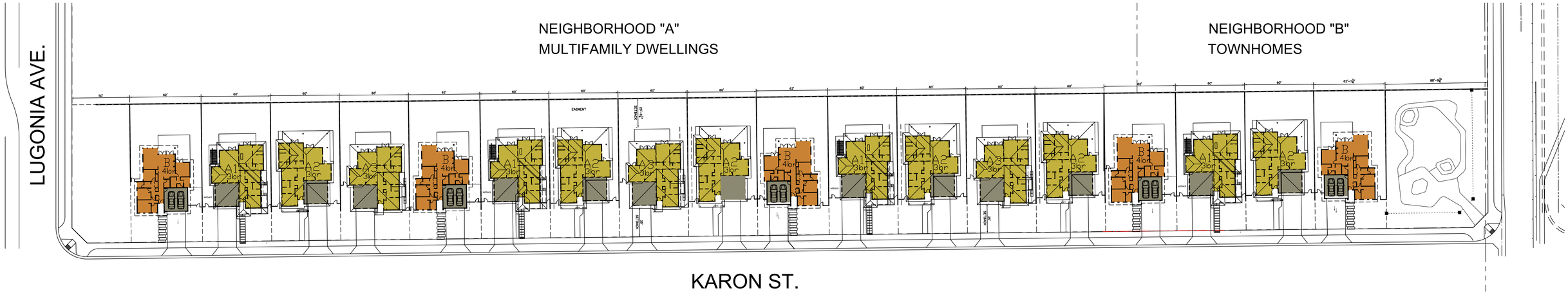
BLDNG SUMMERY:	BLDG TYPE	QUANTITY	SQ.FT.
	B1 - 4BR	5	1,690 SF
	A1 - 3BR	4	1,520 SF
	A2 - 3BR	6	1,520 SF
	A3 - 3BR	3	1,590 SF
TOTAL:		18	28,420 SF

LOT COVERAGE (3BR): 29%
LOT COVERAGE (4BR): 29.9%

NO.OF STORIES 1
BUILDING HEIGHT 19 FT +/-

LEGEND:

- 3 BR. DWELLING
- 4 BR. DWELLING
- 2 CAR GARAGE



SINGLE FAMILY NEIGHBORHOOD MASTER PLAN

1"=40'-0"



SINGLE FAMILY NEIGHBORHOOD STREET ELEVATIONS

1"=40'-0"

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

SF-0.1

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

City of Redlands
REQUEST FOR PLANNING COMMISSION ACTION

Planning Commission **Agenda Item NO. 5. A.**

Meeting Date: 01/23/2024

APPLICANT:
REDLANDS SUMMIT, LLC
(PROJECT PLANNER: RYAN MURPHY, SENIOR PLANNER)

A **PUBLIC HEARING** the "Lugonia Village" residential project located on a 24.4-acre site located on the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street within the Specific Development (EV/SD) District of the East Valley Corridor Specific Plan (APN: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000), for consideration of a recommendation to the City Council to approve the following:

1. Adoption of a **Mitigated Negative Declaration** and Mitigation Monitoring and Reporting program prepared for the project in accordance with Section15074 of the California Environmental Quality Act.

2. A **Socio-Economic/Cost Benefit Study** prepared for the project in accordance with Measure "U".

3. **General Plan Amendment No. 143** – A request to amend the General Plan Designation of approximately 17.9 acres from Commercial to High Density Residential (up to 27 units per acre) and amend the General Plan Designation of approximately one acre from Parks/Golf Courses to High Density Residential (up to 27 units per acre) to accommodate multifamily residential development.

4. **Specific Plan Amendment No. 40 Amendment No. 48** – A request to amend the East Valley Corridor Specific Plan (Special Plan No. 40) to remove the 24.4 acre project site from the boundaries of Specific Plan area.

5. **Zone Change No. 469** – A request to change the zoning designation of the 24.4 gross acre project site from Special Development (EV/SD) District of the East Valley Corridor Specific Plan to 18.89 gross acres of High Density Residential (R-3) District and change the zoning designation of 5.51 gross acres to Single Family Residential (R-1) District.

6. **Commission Review and Approval No. 940** – A request for site plan approval and architectural design review to construct a total of 18 single family homes, ranging in size from 1,520 sq. ft. to 1,690 sq. ft., fronting along Karon Street.

7. **Commission Review and Approval No. 941** – A request for site plan approval and architectural design review to construct a 451-unit multi-family apartment complex fronting on Lugonia Avenue. The residential units include studio, one-bedroom, and two-bedroom floor plans that range from 561 sq. ft. to 1,125 sq. ft. each. The Project also includes onsite parking and recreation areas, with access provided via two driveways on Lugonia Avenue.

8. **Commission Review and Approval No. 942** – A request for site plan approval and architectural design review to construct a 72-unit townhouse development fronting on Pennsylvania Avenue. The Project also includes onsite parking and recreation areas, with access provided via one driveway on Pennsylvania Avenue.

9. **Tentative Parcel Map No. 20469** – A request to subdivide the entire project site into three parcels (3.38 net acres, 4.75 net acres, and 14.48 net acres in size) for development purposes.

10. **Tentative Tract Map No. 20490** – A request to subdivide 3.47 net acres into 20 lots, ranging in size from 5,995 to 10,518 sq. ft., with 18 numbered lots utilized for single family residential development, one lettered lot utilized as a private park, and one lettered lot for stormwater facilities.

11. **Tentative Tract Map No. 20491** – A request to subdivide Parcel 1 of Tentative Parcel Map No. 20469 map for condominium purposes, to be utilized for 72 residential condominium units.

SYNOPSIS

1. General Plan Designation:	Commercial; Low Density Residential; and Parks/golf Courses	
2. Existing Zoning:	Special Development (EV/SD) District of the East Valley Corridor Specific Plan (proposed to change to High Density Residential)	
3. Surrounding Zoning:	North: Concept Plan No. 4 (CP4) South: General Commercial (EV/CG) District of the East Valley Corridor Specific Plan; and Agricultural (A-1) District East: Single Family Residential (R-1) District West: EV/SD District of the East Valley Corridor Specific Plan	
4. Existing Land Use:	Vacant land and unimproved	
5. Surrounding Land Use:	North: Vacant and unimproved parcels South: Retail/commercial uses; vacant and unimproved parcels East: Single-family residential neighborhoods West: Vacant and unimproved parcels	
6. Area / Topography:	Relatively flat property with an approximately 2% slope downward toward the northwest.	
7. Environmental Determination:	A Mitigated Negative Declaration has been prepared for the project in accordance with Section 15074 of the CEQA Guidelines.	
8. Socio-Economic Cost / Benefit Study:	A Socio-Economic Cost/Benefit Study has been prepared and resulted in an annual revenue/cost ratio of positive 1.55.	
9. Planning Commission Submittal Dates:	(A) Date Submitted: (B) Date Accepted As Complete: (C) Planning Commission Meeting:	December 1, 2021 August 7, 2023 January 23, 2024

PROPOSAL

The applicant proposes to develop the 24.4-gross acre project site with 541 residential units, comprised of three distinct neighborhoods created through three separate subdivisions: a 451-unit multiple family apartment community, a 72-unit townhouse community, and a community of 18 single-family homes. The project site is located on the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (see Attachment A – Location Map and Aerial Photo). The apartment community consists of 11 three-story buildings and two recreational buildings with primary access from one signalized entrance on West Lugonia Avenue (see Attachment B-1 – Site Plan), the townhome community consists of 72 two-story attached duplex homes located on private drive aisles with access from a driveway on Pennsylvania Avenue (see Attachment B-2 – Site Plan), and the 18 one-story single-family homes fronting Karon Street, which will buffer the existing single-family neighborhood from the new high-density apartments (see Attachment B-3 – Site Plan). Summary details are provided below. Detailed analysis of each community within the proposed project is further in this report, below each *Commission Review and Approval* section of the report.

Table 1-A below summarizes the unit mix within the apartment project. The apartment units include Studio, 1-bedroom, and 2-bedroom units in varying floor plans and sizes.

Table 1-A: Apartment Development Unit Summary

Unit Type	*Number of Units*	*Minimum Size (sq. ft.)*	*Maximum Size (sq. ft.)*	*Average Sq. Ft. (approx.)*	*Percentage of Unit Mix (approx.)*
0 BR	21	561	561	561	5%
1 BR	200	694	735	724	45%
2 BR	230	1,004	1,125	1,053	50%

Table 1-B below details the dwelling unit and other square footage for each building within the apartment project. A total of 578,277-square feet of gross floor is proposed, including all 451 units and 241 ground-floor garage spaces.

Table 1-B: Apartment Development Building Summary

Building No.	*Building Square-Feet*	*Number of Dwelling Units*	*Number of Ground-floor Garage Spaces*
1	15,786	13	8
2	24,500	21	9
3	35,070	30	19
4	88,662	66	35
5	45,765	39	17
6	88,682	68	35
7	35,070	30	19
8	35,070	30	19

9	88,662	68	35
10	88,662	68	34
11	20,604	20	11
Leasing Office / Amenity	8,596	-	-
Fitness Facility	3,168	-	-
Totals:	*578,277*	*451 units*	*241 garage spaces*

Table 2-A below breaks down the unit summary of the townhome community. A mix of 3- and 4-bedroom attached duplexes are proposed, some with loft space and some without loft space.

Table 2-A: Townhome Development Unit Summary

Unit Type	*Unit Count*	*Size (sq. ft.)*
3 BD, 2.5 BA	8	1,381
3 BD, 2.5 BA + Loft	43	1,786
4 BD, 2.5 BA	8	1,937
4 BD, 2.5 BA + Loft	13	1,983
Totals:	*72 units*	*127,401 sq. ft.*

Table 2-B below breaks down the building summary for the townhome community. A total of 127,462-square feet of gross floor area is proposed.

Table 2-B: Townhome Development Building Summary

Building Type	*Count*	*Building Size (sq. ft.)*
B1	6	3,125
B1X	2	3,125
B2	5	3,488
B2X	7	3,488
B3	2	3,874
B3X	2	3,874
B4	12	3,728
Pool Building	1	374
Totals:	*37 buildings*	*127,462 sq. ft.*

A key element of the proposed plan includes the extension of Pennsylvania Avenue from Karon Street to Tennessee Street (a distance of approximately 1,647 feet) to provide vehicle and pedestrian access to the townhome community. More importantly, it will allow for adequate drainage, water, and sewer services to be provided to the townhomes.

In order to construct the proposed project, the applicant proposes several legislative applications, including a General Plan Amendment, Specific Plan Amendment, Zone Change, and Density Bonus Agreement.

- **General Plan Amendment**: change the General Plan land use designation of approximately 17.9 acres from Commercial to “High Density Residential” and change the land use designation of approximately one acre from Parks/Golf Courses to “High Density Residential.” Approximately 3.5 acres of the project site on the east side fronting Karon Street is currently designated as Low Density Residential and will not change.

- **Specific Plan Amendment**: amend the East Valley Corridor Specific Plan (Specific Plan 40) land use map to remove the entire 24.4-acre project site from the Special Development (EV/SD) District.

- Z**one Change**: amend the Zoning Map to designate the multi-family development area as “Multiple Family Residential (R-3) District” and designate single-family development area as “Single Family Residential (R-1) District” in accordance with RMC Title 18 (Zoning Regulations).

- **Density Bonus**: a total of 28 residences within the apartment community would be restricted for rental only to Very Low-income households, as defined. Therefore, the project is eligible for a Density Bonus and concessions and waivers pursuant to State Density Bonus Law (Gov. Code § 65915 et seq.). Pursuant to Government Code § 65915(d)(1), a requested concession or incentive shall be granted unless the City makes written findings, based on substantial evidence of any of the following: (1) the concession or incentive does not result in identifiable and actual cost reductions to provide the proposed affordable housing, (2) the concession or incentive would have a specific, adverse impact on public health and safety, or on any real property listed on the California Register of Historical Resources, and for which there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact without rendering the project unaffordable to low-income and moderate-income households, or (3) the concession or incentive would be contrary to state or federal law.

  The applicant has requested concessions that include: modification of the requirement for landscape islands within parking lots for the apartment development (i.e., where otherwise landscaped islands would be required at a rate of one per every 20 adjacent parking spaces), and a waiver of specified development standards pertaining to interior yards, setbacks, and building separation requirements within the R-3 zone. It should be noted that the reduced standards for the number of parking spaces required per dwelling unit is not considered a concession or incentive under Gov. Code § 65915(d); Gov. Code § 65915(p) is a separate subsection that provides the mandated parking ratio per dwelling unit within a housing development that invokes State Density Bonus Law.

  State Density Bonus Law also constrains the ability to deny requested waivers. Government Code § 65915(e)(1) restricts the City from applying development standards that would physically preclude the construction of a development entitled to a density bonus at the increased density or with the concessions/incentives, unless the City makes findings that the waiver would have a specific, adverse impact on public health or safety (as defined by State law in Gov. Code § 65589.5) and there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact.

BACKGROUND

The project site currently consists of vacant and unimproved land. Historic aerial surveys indicate that the site previously supported agricultural uses (citrus groves); however, agricultural use of the property ceased in 1984.

2021-2029 Housing Element: The City's new 2021-2029 Housing Element was certified by the California Department of Housing & Community Development (HCD) on September 26, 2022. State Law requires it to: include housing programs that identify adequate sites to accommodate the jurisdiction's share of the Regional Housing Needs Allocation (RHNA); assist in the approval of housing for Very Low- and Low-income households; and remove or mitigate governmental constraints that inhibit building more affordable housing.

Housing Crisis Act of 2019: The Housing Crisis Act of 2019, also referred to as Senate Bill 330 (SB 330), became effective on January 1, 2020. SB 330 imposes several limitations on cities and counties with regard to proposed housing development projects, including the provisions listed below.

- The City may conduct no more than five (5) hearings on the project (including any Commission or Board meetings, workshops, subcommittee meetings, etc.).
- The City may still use its Architectural Design Guidelines that were previously adopted in 2009, provided the City does not: a) deny the project, or b) reduce the number of dwelling units based on non-conformance with subjective design criteria.
- Requires any disapproval of a project that complies with objective General Plan and zoning standards (or approve it on the condition that it be developed at a lower density) to base its decision upon written findings supported by substantial evidence in the record and places the burden of proof on the local agency.
- Prohibits the City from changing the zoning or development standards that would: change the allowable land use to a less intensive use or reducing the intensity of use below that which was in effect on January 1, 2018; impose or enforce a moratorium on housing development within all or a portion of the jurisdiction of the city; and, impose or enforce new design standards established on or after January 1, 2020, that are not objective design standards, as defined.

ANALYSIS

A) General Plan

Existing Land Use Designation: The majority of the subject site is located within the Commercial land use designation (see Attachment C-1, Existing General Plan Land Use Map) which supports certain types of commercial and light industrial uses such as auto services, other commercial retail and services, and manufacturing. Other land use designations are also currently in place on the property: Low Density Residential (up to 6.0 dwelling units per acre) for the easterly strip of the project site fronting Karon Street; and a small (approximately 1 acre) circular portion of land with the Parks/Golf Courses land use designation. Surrounding land use designations include Commercial to the north, west, and south, and Low Density Residential to the east. With the decline of commercial development, certain areas, including the project site, have been identified in the City's 2021-2029 Housing Element and its housing sites inventory as properties suitable for higher-density residential development. Approval of the project will be consistent with several policies and goals in the Housing Element.

General Plan Amendment: The project proposes a residential density of 27.2 units per acre, which exceeds the allowable residential density of the Commercial land use designation. In order to implement the proposed residential project, a General Plan Amendment is proposed (see Attachment C-2, Proposed General Plan Land Use Map) to change the land use designation of approximately 17.9 acres of Commercial and approximately one acre of Parks/Golf Courses areas to High Density Residential. The High Density Residential land use designation allows up to 27 dwelling units per acre, plus State-mandated density bonuses where applicable. This Amendment would eliminate all portions of the Parks/Golf Courses land use designation within the project area.

As the project site has the Commercial land use designation on three sides (north, south, and west), the preservation of the Low Density Residential designation along Karon Street provides an appropriate physical buffer between the lower-density single-family neighborhoods directly to the east and northeast of the project site.

Conformance with General Plan Policies: The project, including the proposed General Plan Amendment, is consistent with a number General Plan policies, goals, and programs as analyzed in the table contained in Attachment D. These policies and goals include those which promote buffers between commercial uses, transitions between low-density and high-density residential uses, siting of high-density projects near regional shopping centers, rezoning land identified on the housing sites inventory to a higher density, promote a variety of housing types and densities, and single-family residential development, among others.

B) Current Zoning Designation

The property is currently located in the Special Development (EV/SD) District of the East Valley Corridor Specific Plan (see Attachment E-1, Existing Zoning Map) which is intended to permit administrative/professional, commercial or industrial developments, or a mixture of such uses. The EV/SD District generally does not allow residential uses (except that single-family residential is allowed as a buffer use, which is not applicable in this case). The proposed Specific Plan Amendment will remove the entire 24.4-gross acre project site from East Valley Corridor Specific Plan. A Zone Change is proposed that will establish zoning districts that are consistent with the proposed General Plan Amendment for the project.

C) Zone Change No. 469

To allow for the proposed project, the applicant is proposing to change the zoning designation for 18.89 gross acres to "High Density Residential (R-3) District" and change 5.51 gross acres to "Single Family Residential (R-1) District" (see Attachment E-2, Proposed Zone Change). In accordance with RMC Section 18.200.060, two findings must be made by the Planning Commission to recommend approval of a Zone Change, and the findings supporting approval are provided in the resolutions attached to this report.

D) Overall Site Plan

The project proposes three distinct development types, as follows: a single-family detached neighborhood on approximately 3.5 acres on the east side (fronting along Karon Street); an attached townhome neighborhood on approximately 4.75 acres on the north side (fronting the extension of Pennsylvania Avenue); and an apartment community on 14.48 acres in the middle and south sides (fronting Lugonia Avenue). Each development has its own entitlement as described further in the following sections.

Traffic: In accordance with Measure U, a traffic study was prepared for the project (Attachment F), to evaluate the potential for transportation impacts resulting from the development of the proposed project. The study, prepared by Michael Baker International, analyzed existing conditions without the project, existing conditions with the project, and recommended improvements. The traffic study specifies specific roadway and site access improvements to be included in the project (see Attachment G-1, Conceptual Grading Plan; and Attachment G-2, Street Improvement Plans):

- Half-width construction along W. Lugonia Ave., Pennsylvania Ave., and Karon Street project frontages.
- Construct a one-way-stop control at the new intersection of Tennessee Street and the planned Pennsylvania Avenue; east leg of the intersection is to be full-width improvement.
- Construct a one-way-stop controlled driveway to create a new T-intersection along W. Lugonia Avenue, west of New York Street.
- Construct a signal-controlled driveway at the intersection of W. Lugonia Ave. and New York St./Project Driveway, with signal modifications to accommodate a new North intersection leg.

As shown in the study, the addition of the proposed project with the above improvements does not degrade the Levels of Service below the current Levels of Service grade. Therefore, the proposed project is forecast to result in no substantial transportation effects at the study intersections and no other improvements are required.

E) Tentative Parcel Map

Tentative Parcel Map No. 20469 (Attachment H-1) will subdivide the site into three numbered parcels for development purposes. Each parcel will each have its own distinct residential development and an accompanying tentative tract map. Parcel 1 fronts the Pennsylvania Avenue extension, will be used for condominium purposes, is the intended location of the townhome community, and is approximately 4.75-acres in size; Parcel 2 fronts Karon Street, will be used for the development of the single family homes, and is approximately 3.38 net acres in size; Parcel 3 fronts West Lugonia Avenue, will be used for apartment purposes and is 14.48-acres in size. All the parcels within this subdivision exceed the minimum size and dimension requirements within their proposed zoning districts, as detailed in Attachments I-1 (R-1 Development Standards) and I-2 (R-3 Development Standards). In addition, all necessary access and improvements are required for each parcel. Site design and access details are provided further in the report, in the sections for each different residential community.

F) Commission Review & Approval No. 940 and Tentative Tract Map 20490 (Detached Single-Family Development)

Tentative Tract Map No. 20490 (Attachment H-2) will subdivide the proposed Parcel 2 (3.38 acres) of Tentative Parcel Map No. 20469 into a total of 20 lots. The 18 residential lots will range in size between 5,995 to 10,518 square-feet for 18 single-family dwelling units, with one lettered lot for a privately-owned pocket park (10,518 square feet in size), and one lettered lot for stormwater facilities. An accompanying Commission Review & Approval permit is requested for design review and site plan approval by the Planning Commission, including architectural design review.

Site Access and Circulation: The single-family residential community is proposed as a total of 18

single family homes, ranging in size from 1,520 sq. ft. to 1,690 sq. ft., fronting Karon Street. Each home takes direct access from Karon Street (classified as a residential collector street) and is provided a 20-foot wide driveway that leads to a two-car garage.

Development Standards: Each numbered lot and single-family home on those lots complies with the zoning development standards for the R-1 zone (see Attachment I-1, Table of R-1 Development Standards). These development standards primarily pertain to minimum lot size and dimensions, yards and setbacks, lot coverage, building height, parking, and landscaping.

Architecture: The architectural design concept for the single-family homes is contemporary in nature (see Attachment J-1, Single Family Architectural Typicals), and is intended to assist in the visual transition between the existing single-family neighborhoods (to the east of the project site) and the more modern architectural design of the higher-density portions of the project to the west. Two product types are proposed: Type A with 3 bedrooms, and Type B with 4 bedrooms. Three different floor plans are provided for the 3-bedroom units, each with a similar but distinctive architecture. Various architectural materials and finishes are proposed: stucco siding, artificial wood siding, “hardy” board siding, brick and stone veneer, concrete tile roofs and asphalt shingle roofs, and more. Color combinations consist of earth tones. The proposed design meets the City’s adopted Architectural Design Guidelines (see Attachment K-1 for additional analysis).

Landscape, Fences and Walls: Landscape details are shown on the landscape plan (see Attachment L-1). The landscape planting palette consists of a combination of trees, shrubs, and groundcover. Conditions of Approval are included that will ensure that the tree size and species mix complies with code requirements, and that front yard landscaping is installed prior to certificates of occupancy for each unit.

A 6-foot tall decorative split-face block wall is proposed at the rear and side yards visible from the public right-of-way; Interior side yards for each home are separated by a vinyl fence less than or equal to 6-feet in height; The front yard of each home is proposed to have a decorative garden wall is proposed at the interior property lines to clearly delineate property lines; Lastly, the lots that feature a small private park and stormwater runoff facilities are enclosed by a wrought iron fence less than or equal to 6-feet in height (see Attachment L-2, Wall and Fence Plan). All required walls and fences are provided, and conditions of approval are included as well.

Recreation Space: Additional open space is provided within a 10,518-square foot private pocket park. This space is designated for use only by the residents of the single-family homes along Karon Street. Amenities include a decomposed granite (DG) path enclosing a turf area, and benches.

G) Commission Review & Approval No. 941 (Apartment Development)

The proposed apartment development is sited on Parcel 3 of Tentative Parcel Map, the largest of the parcels at 14.48-acres in size. The proposed project will comply with the applicable development standards for the proposed Multiple Family Residential (R-3) District, as summarized below.

Site Design, Access and Circulation: The apartment development consists of 11 three-story buildings and two recreation buildings. The buildings are arranged around a central linear park and the common open space amenities. Ground-level garages and surface parking lots are placed behind the U-shaped buildings and around the perimeter of the site.

Site access is provided via two secure entry points: 1) a signalized main entrance located at the intersection of West Lugonia Avenue and New York Street, and 2) a secondary driveway at the southwest corner of the site. In addition, the main entry provides enhanced pedestrian access and decorative paving in the public parking area. A number of 30-foot-wide drive aisles ensure adequate access throughout the site to all parking, trash service areas, and firefighting apparatus.

Development Standards: The project complies with all applicable development standards for the R-3 zoning district (see Attachment I-2, Table of R-3 Development Standards), except as noted in the Density Bonus Agreement. These development standards primarily pertain to building separation and setbacks, lot coverage, pedestrian connectivity, common and private open space, building height and more. Notably, while the project is required to provide a minimum of 99,703 square feet of common open space, it exceeds this requirement through the provision of 164,535 square feet of common open space.

Architecture: The architectural design of the apartment community can be described as having a more contemporary style, and incorporates elements that are reminiscent of mid-century modern designs (see Attachment J-2, Apartment Elevations). Qualities employed by the architecture include clean lines, flat roofs, offset wall panels that create shadow and movement along the face of the walls, glass, wood siding, juxtaposition of different materials, and light earth tones. A variety of siding materials and fixtures are provided, including stucco, stone and tile veneer, glass, metal and aluminum. The proposed design meets the City's adopted Architectural Design Guidelines (see Attachment K-2 for additional analysis).

Architectural features are present along the Lugonia Avenue street frontage that will activate the street scene to create a vibrant, urban, and pedestrian-scaled environment. This includes porches and balconies, street-facing windows, and open tower elements.

Parking: The project provides parking ratios in accordance with State Density Bonus Law, which states the maximum number of spaces that may be required for projects using a density bonus. Parking ratios are provided at a rate of one (1.0) space for each studio and 1-bedroom unit, and 1.5 spaces for each 2-bedroom unit. Despite only being required to provide a total of 566 spaces for the apartment community, a total of 744 parking spaces will be provided, thereby exceeding parking requirements per State law. Table 3 details the parking totals for the site. Guest parking is not required in accordance with State law.

Table 3: Apartment Development Parking Totals

Types of Spaces	*Number of Spaces*	*Percentage of Parking Area*
Garage	241	32%
Carports	325	44%
Parallel	7	1%
Open, Uncovered	139	19%
EV Charging Stalls	32	4%
Total Required Parking	**566**	100%
Total Spaces Provided	**744**	
Parking to Unit Ratio	1.65 spaces per dwelling unit	

Landscape, Fences and Walls: A combination of trees, shrubs and groundcover is employed throughout the site. All required landscape yards and landscape areas are proposed within the site, including front yard landscaping and parking lot screening areas. In order to achieve the necessary slopes for drainage, masonry retaining walls are proposed around the perimeter of the site, which allow the development areas closest to the streets to be brought to street level (see G-1 – Conceptual Grading Plan). The tallest walls are at the center and rear of the site, where they are approximately 6 feet high. A decorative split-face perimeter wall encloses the site, except along the Lugonia Avenue frontage, where a tubular steel fence allows open views onto the buildings and areas beyond. All walls and fences required by the Redlands Municipal Code will be provided. Conditions of approval are included that will ensure the tree size and mix requirements will be met prior to permit issuance. In addition, conditions are included that require a Minor Exception Permit to be approved for any retaining walls or combination fences/walls that might exceed 6 feet high.

Recreational Amenities: Two recreational buildings are provided: a 3,168 sqaure-foot fitness center and a clubhouse building 8,596 square-feet in size, with adjacent pool deck with cabanas. The pool, cabanas, and clubhouse will allocate space for the leasing center and for residents of the community to enjoy active recreation, and a space to host small or informal gatherings.

Building No. 10 (adjacent to the fitness center and pool area) provides a ground-level children's play area where people can bring their family for free-play and creative activities supervised by adults. Within the central greenbelt, a meandering pedestrian path connects open turf and park areas that include barbeques, shade lattice structures, and seating amenities. Two pocket parks are proposed, inclusive of a “tot lot” located near the fitness center and pool area. All required amenities and open space areas (common and private) have been provided.

H) Commission Review & Approval No. 942 and Tentative Tract Map 20491 (Townhome Condominium Development)

Tentative Tract Map No. 20491 (Attachment H-3) will subdivide the proposed Parcel 1 (4.75 acres) of Tentative Parcel Map No. 20469 for condominium purposes, into a total of 72 lots. The townhomes are designed as a series of attached duplexes placed around a central recreation and amenity area, accessed by a circular private drive aisle, with branch-offs that terminate in “auto courts.” The street of the townhome community is designed with features along the street frontage that will activate the street to create a vibrant, urban, and walkable environment. This includes private front yard courtyards, and street facing windows.

The proposed townhome development (for condominiums) will comply with the applicable development standards for the R-3, Multiple Family District as summarized below.

Site Access and Circulation: A 30-foot-wide central driveway with decorative paving provides vehicular and pedestrian access from the proposed Pennsylvania Avenue extension. Private interior drive aisles 26-feet in width provide access to private garages and entryways for homes.

Development Standards: The project complies with all applicable development standards for the R-3 zoning district (see Attachment I-2 - Table of R-3 Development Standards), except as noted in the Density Bonus Agreement. These development standards primarily pertain to front, side and rear setbacks, lot coverage, pedestrian connectivity, common and private open space, building height and more.

Waiver of Building Separation Requirements: Pursuant to State Density Bonus Law, in order to achieve the maximum permitted density proposed under the General Plan Amendment, the applicant is requesting a reduction (concession) of the building separation requirements contained in RMC Section 18.60.160. This request for concession is included in the proposed Density Bonus Agreement. The project proposes to have minimum building separations of 10 feet, and drive aisle setback of approximately 2 feet, which are less than what the code would otherwise require.

Architectural Design: Architecture for the townhomes is the most contemporary among the three neighborhoods, and has a modern style based on clean lines, flat roofs, and basic forms in earth tones (see Attachment J-3). While modern building forms are proposed, a variety of enhanced exterior colors and siding materials such as wood, stucco and stone veneer are provided, combined with decorative ironwork, awnings, and other fixtures to relate the new style to the surrounding development. The proposed design meets the City's adopted Architectural Design Guidelines for residential projects (see Attachment K-3 for additional analysis).

Parking: A 2-car garage is provided for each townhome unit, and the project provides 21 guest parking spaces (note that no guest parking spaces are required per State law). Guest parking spaces that are voluntarily provided are placed throughout the development, and can be accessed from the drive aisles.

*Landscape, Fences and Wall*s: A combination of trees, shrubs and groundcover is employed throughout the site (see Attachment L-1, Landscape Plans). All required landscape yards and landscape areas are proposed within the site, including front yard landscaping. Walls are also proposed (see Attachment L-2, Wall and Fence Plans). The private front yard courtyards along Pennsylvania Street are enclosed by a combination solid/open wall 4-feet in height. The perimeter of the project and interior yards are enclosed with a series of 6-foot split face decorative masonry walls. The pool area is enclosed with a minimum 5-foot high tubular steel fence, and smooth stucco wall. Conditions of approval have been recommended that ensure that tree size and mix requirements are met during the plan check process. In addition, conditions are in place that require a Minor Exception Permit to be reviewed and approved for any retaining or retaining combination walls that exceed 6-feet in height.

Recreational Amenities: Two pocket parks are provided on the south side of the project, which may include barbeques, corn hole/bocce ball, fire pits, or seating amenities. A pool and pool deck with an accompanying recreation building 374-square feet in size is provided at the center of the community for use by the residents.

l) Density Bonus Agreement and Inclusionary Housing Program

Density Bonus Incentives and Concessions: The applicant has requested a density bonus in accordance with California State law. The City requires approval of a Density Bonus Agreement for all density bonus applications. Such agreement(s) require the approval of the City Council. A density bonus granted to a residential development project shall consist of an increase over the otherwise maximum allowable residential density under the applicable zoning ordinance and land use element of the City's General Plan as of the date of application. In this case, the applicant is requesting that the apartment and townhome units be constructed at an ultimate density of 27.2 units per acre, which would otherwise exceed the maximum allowable density of 27.0 dwelling units per acre. The proposal would be consistent with the density proposed for this site in the 2021-2029 Housing Element for higher-density housing and affordable housing.

Inclusionary Housing Program: RMC Chapter 18.230 was recently adopted by the Redlands City Council on July 5, 2023, and established an Inclusionary Housing Program for the City of Redlands. This ordinance requires any Residential Development that includes ten (10) or more units to provide affordable housing, as defined. The applicant has submitted an Inclusionary Housing Plan (see Attachment M-1) in conjunction with their applications for discretionary approvals. Staff has reviewed the proposal, it complies with code requirements, and staff recommends approval.

Method(s) of Compliance with Inclusionary Housing Requirements: The Inclusionary Housing Plan provided by the applicant shows that the applicant proposes to comply with the inclusionary housing requirement through the provision of affordable housing units on the project site. A total of 5% of the units for the project will be restricted for rental only to very-low-income households, as defined within the inclusionary housing program, which meets the minimum required amount of affordable housing for the project.

Recording of Affordable Housing Agreements: Conditions of approval have been added requiring that an Affordable Housing Agreement, in a form approved by the City, is recorded against Inclusionary Units or the Residential Development in its entirety, as deemed appropriate by the City Manager in consultation with the City Attorney, prior to the issuance of any building permit for the project. The Affordable Housing Agreement shall ensure that the applicant develops the required Inclusionary Housing Units and complies with all other terms of the approved Inclusionary Housing Plan and the Redlands Municipal Code.

Upon recommendation by the City Attorney's office, a single agreement is proposed that will satisfy both the requirements of State Density Bonus Law and the City's Inclusionary Housing Program. A draft of the agreement is provided as Attachment M-2.

J) Socio-Economic Cost/Benefit Study

In accordance with the provisions of the Principles of Management Development within the Redlands General Plan, the project was required to undergo a Socio-Economic Cost Benefit study (Attachment N). The study recommends that the project will not create an unmitigable physical blight or overburden public services in the community because project design features described in the Initial Study/Mitigated Negative Declaration, and incorporated in the Socio-Economic Cost Benefit Study will reduce effects to a less than significant level. According to the cost/benefit model used by the City, upon full buildout this project will provide the City approximately $578,377 in annual revenue and annual costs of $372,710. This will result in a positive balance of $205,667 annually (or a combined positive cost/benefit ratio of +1.55) for years 2025 through 2034.

ENVIRONMENTAL REVIEW

The City retained an environmental consultant to fully analyze the project and prepare an Initial Study (Attachment O-1) in accordance with the California Environmental Quality Act (CEQA). In accordance with the CEQA Guidelines, the Initial Study/Mitigated Negative Declaration (IS/MND) was made available for public review and comment for 30 days (State Clearinghouse No. 2023120124). A Notice of Intent was filed with the County Clerk on December 5, 2023, and with the State Clearinghouse. The IS/MND was circulated for 30 days between December 6, 2023, and January 4, 2024. The public review Initial Study and Mitigated Negative Declaration was also made available via the City's website (www.cityofredlands.org/post/environmental-documents).

The Initial Study recommends a Mitigated Negative Declaration with 14 mitigation measures that pertain to Biological Resources, Geological Resources, Transportation, Cultural Resources, and Tribal Cultural Resources. All mitigation measures will ensure that any environmental effects are less than significant. After mitigation, no significant effects were identified as a result of the project, and the recommended mitigation measures will be incorporated into the project as mandatory Conditions of Approval. The document also includes a Mitigation Monitoring & Reporting Program (MMRP) (see Attachment O-2). The IS/MND and all technical studies are available at the City's website (www.cityofredlands.org/post/environmental-documents).

The City's environmental consultant has assembled the public comments and prepared Responses to Comments (see Attachment O-3). One public comment letter was received from Omnitrans requesting that the City require the construction of a bus landing and bus pad on the north side of West Lugonia Avenue, between Karon Street and the signalized New York Street intersection. This request has been made a condition of approval for the project as permitted by the Redlands Municipal Code.

FINDINGS

The appropriate Findings for each entitlement are included in the attached Resolutions. All necessary Findings can be made for each discretionary action, and therefore, staff recommends approval of the project.

RECOMMENDATIONS

Based on the above analysis in this staff report and the related findings, staff recommends that the Planning Commission adopt Resolution Nos. 1650, 1651, and 1652 to make a recommendation to City Council to adopt the Initial Study/Mitigated Negative Declaration prepared for the project, approve the Socio-Economic Cost/Benefit Study, and approve the requested entitlements for the project.

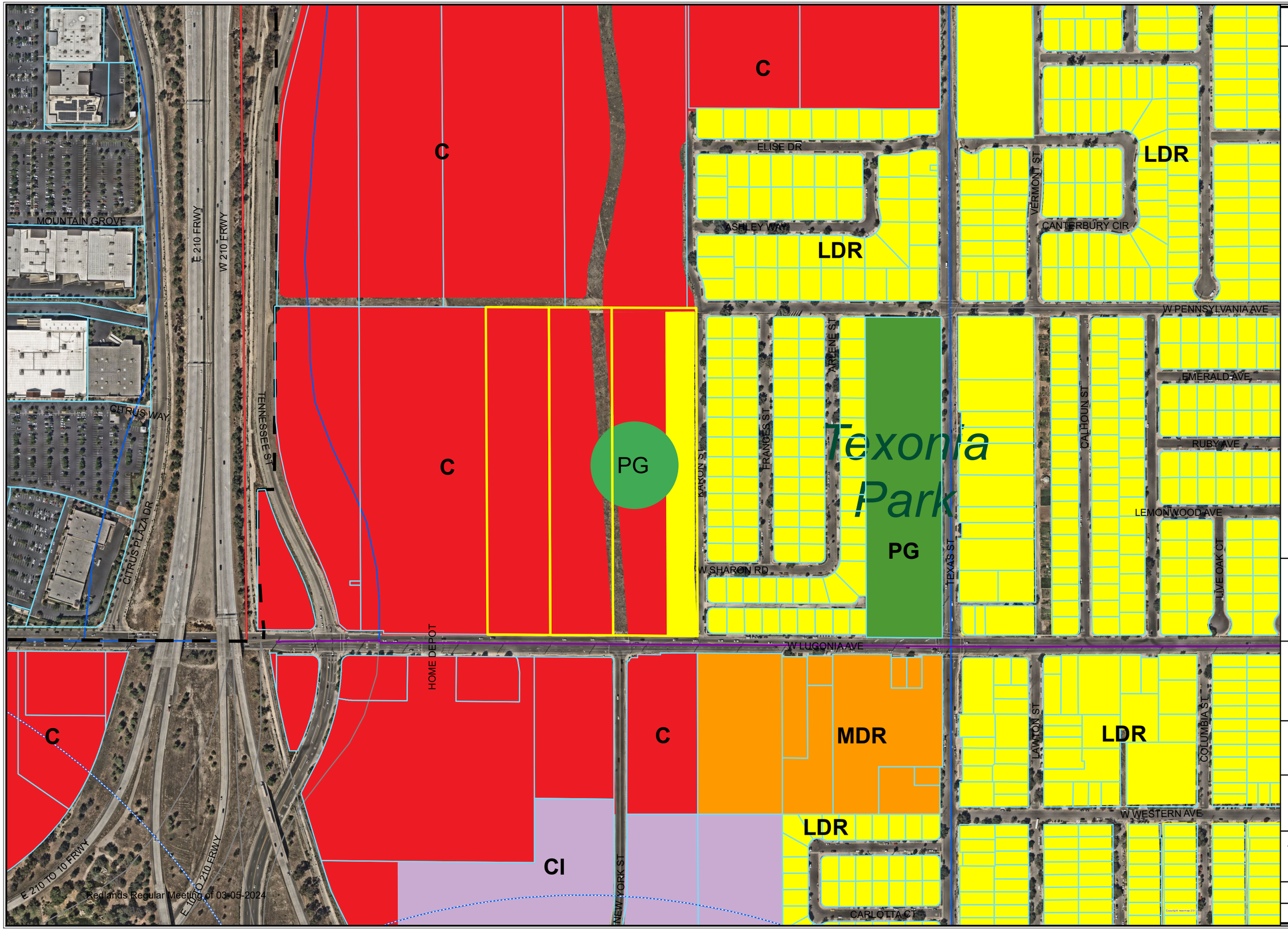
MOTIONS

If the Planning Commission concurs with staff's recommendation, the following motion has been provided:

> "I move that the Planning Commission adopt Resolution Nos. 1650, 1651, and 1652, recommending that the City Council:
>
> Adopt a Mitigated Negative Declaration and Mitigation Monitoring & Reporting Program for the proposed project;
> Approve a Socio-Economic Cost/Benefit Study for the project;
> Approve General Plan Amendment No. 143;
> Approve Amendment No. 48 to Specific Plan 40;
> Approve Zone Change No. 469;
> Approve Tentative Parcel Map No. 20469;
> Approve Tentative Tract Map Nos. 20490 and 20491;
> Approve Commission Review & Approval Nos. 940, 941, and 942; and,
> Approve the Density Bonus and Inclusionary Housing Agreements for the project."

Attachments

Attachment A: Location Map and Aerial Photo
Attachment B-1: Site Plan (Apartments)
Attachment B-2: Site Plan (Townhomes)
Attachment B-3: Site Plan (Single Family Homes)
Attachment C-1: Existing General Plan
Attachment C-2: Proposed General Plan
Attachment D: Table of General Plan Policies
Attachment E-1: Existing Zoning Map
Attachment E-2: Proposed Zone Change
Attachment F: Traffic Impact Study
Attachment G-1: Grading Plan
Attachment G-2: Street Improvement Plans
Attachment H-1: Tentative Parcel Map 20469
Attachment H-2: Tentative Tract Map No. 20490
Attachment H-3: Tentative Tract Map No. 20491
Attachment I-1: Table of R-1 Development Standards
Attachment I-2: Table of R-3 Development Standards
Attachment J-1: Single Family Architectural Typicals
Attachment J-2: Apartment Elevations
Attachment J-3: Townhome Community Elevations
Attachment K-1: Table of Architectural Design Guidelines (SFR)
Attachment K-2: Table of Architectural Design Guidelines (Apartments)
Attachment K-3: Table of Architectural Design Guidelines (Townhomes)
Attachment L-1: Landscape Plans
Attachment L-2: Fence and Wall Plans
Attachment M-1: Inclusionary Housing Plan
Attachment M-2 - Lugonia Village Draft Density Bonus Agreement
Attachment N: Socio-Economic Cost/Benefit Study
Attachment O-1: Initial Study/Mitigated Negative Declaration
Attachment O-2: Mitigation Monitoring & Reporting Program
Attachment O-3: Comments, Response to Comments, and Errata
Attachment P-1 - PC Reso 1650 - GPA, MND, and SECB
Attachment P-2 - PC Reso 1651 - SP40 Amendment and Zone Change
Attachment P-3 - PC Reso 1652 - Lugonia Village Project



General Plan

Existing

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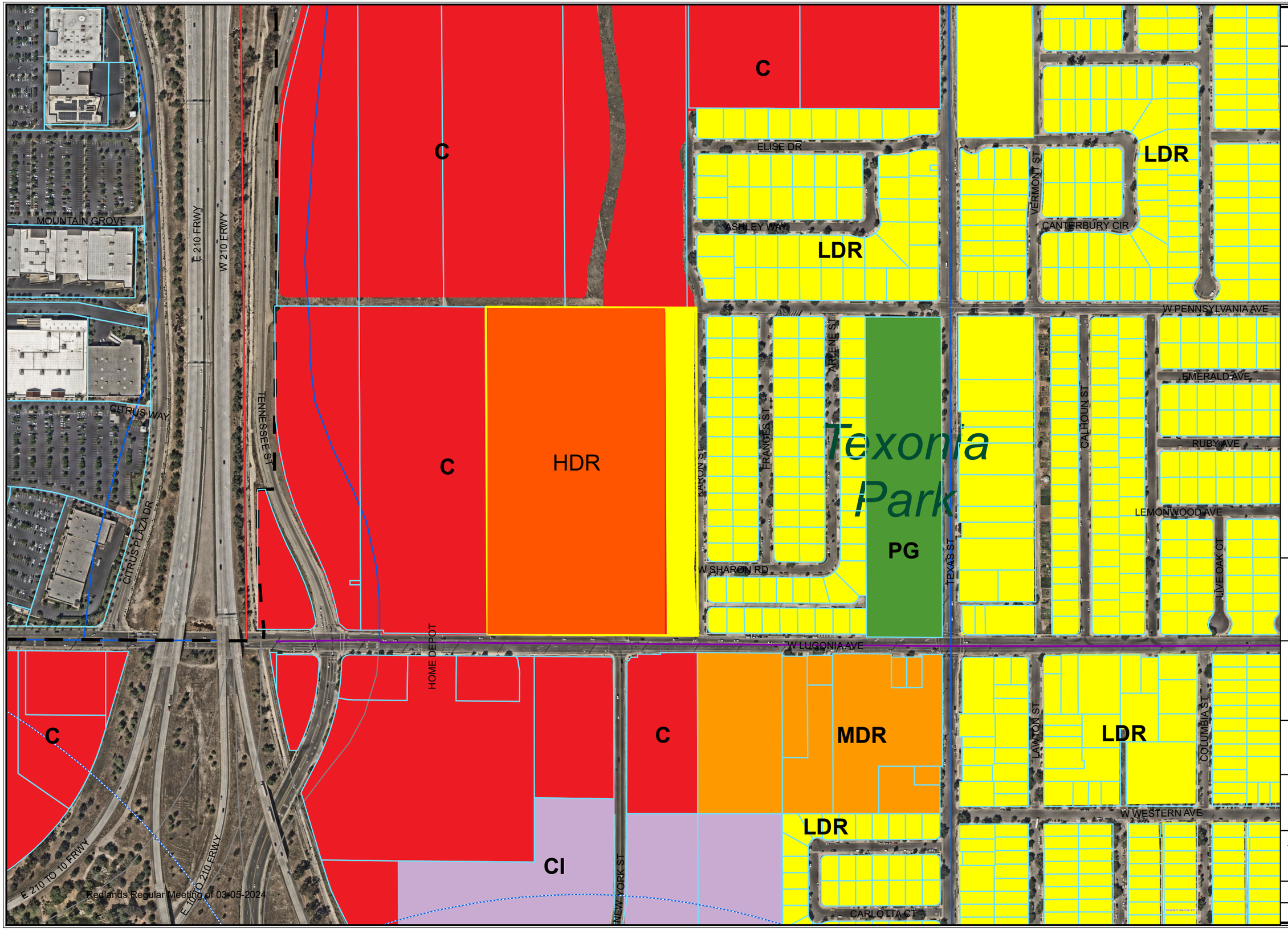
City of Redlands
Department of Innovation & Technology
Geographic Information Systems

City of REDLANDS "A City That Works"

January 14, 2024

OneStop.mxd



General Plan

Proposed

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City of REDLANDS "A City That Works"

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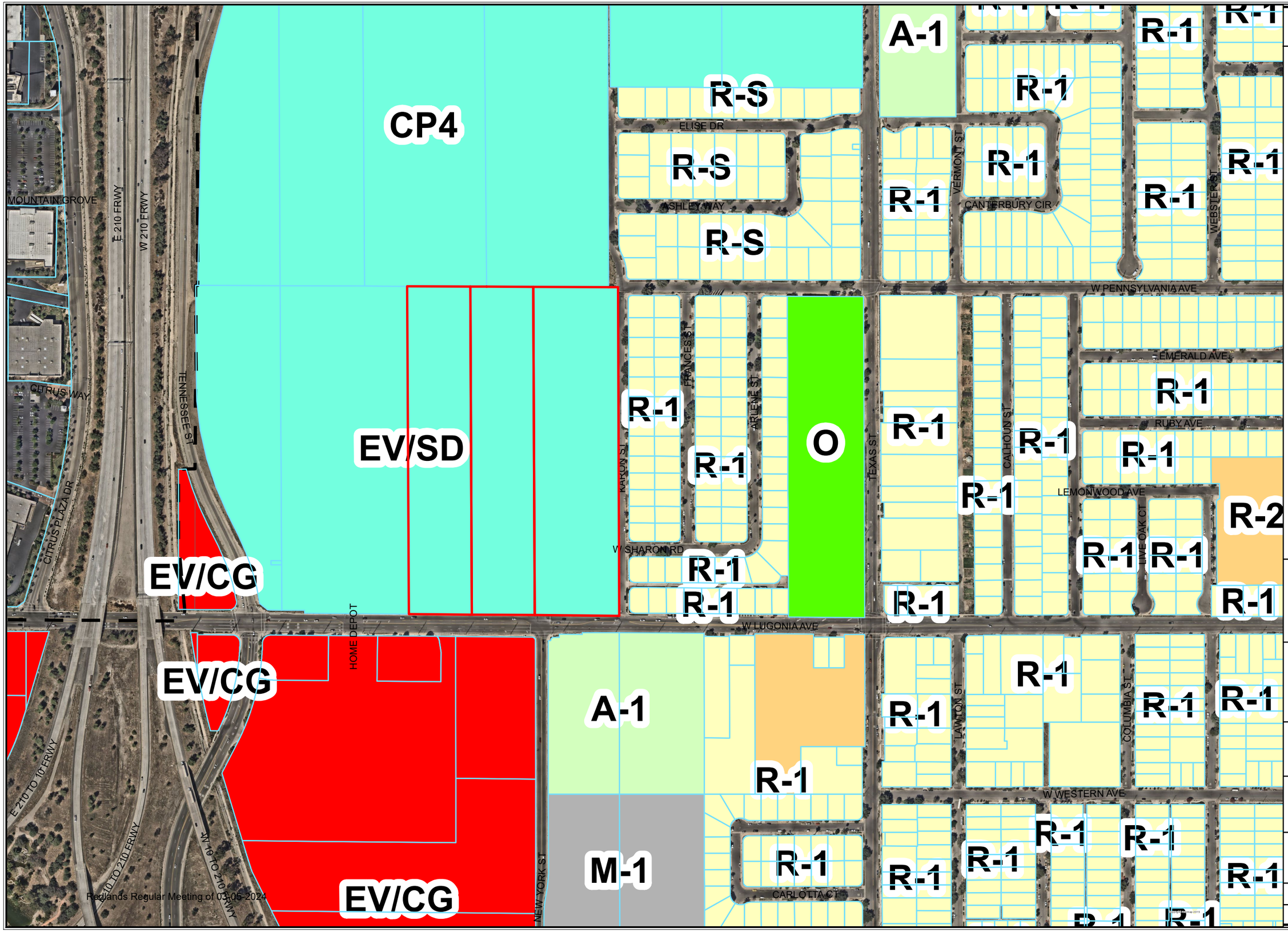
CONSISTENCY WITH 2035 GENERAL PLAN

GENERAL PLAN POLICY	PROPOSED PROJECT
Chapter 4: Livable Community	
4-P.3: Focus new development in infill areas in order to preserve open space, agriculture, and citrus groves, particularly around the edges of the city.	Consistent
4-A.3: Ensure that infill development complements existing development in use, design, and scale, and that it supports the cohesion and integration of the city's development pattern.	Consistent
4-P.8: Provide for buffers and transitions between low- and high-intensity land uses.	Consistent
4-P.9: Locate medium- and high-density development near regional access routes, transit stations, employment centers, shopping areas, and public services.	Consistent
4-P.10: Ensure that the scale and character of new development is appropriate for surrounding terrain and the character of existing development.	Consistent
4-P.16: Promote a variety of housing types to serve the diverse needs of the community.	Consistent
4-A.7: Promote a range of residential densities to encourage a mix of housing types in varying price ranges and rental rates.	Consistent
4-A.8: Promote the development of a greater variety of housing types, including single-family homes on small lots, accessory dwelling units, townhomes, lofts, live-work spaces, and senior and student housing to meet the needs of future demographics and changing family sizes.	Consistent
4-A.11: Ensure that opportunities exist for the development of housing types that are affordable to all segments of the Redlands community and are distributed equitably throughout the community.	Consistent
4-P.48: Provide development and infill opportunities as alternatives to building at the edges of the city.	Consistent
4-A.157: Include the Police and Fire departments in the review of new developments to provide feedback on building and site design safety.	Consistent
Chapter 5: Connected City	
5-P.10: Require developers to construct or pay their fair share toward improvements for all travel modes consistent with the layered network.	Consistent
5-A.5: As part of street redesigns, plan for the needs of different modes – such as shade for pedestrians, lighting at pedestrian scale, mode-appropriate signage, transit amenities, etc.	Consistent

GENERAL PLAN POLICY	PROPOSED PROJECT
5-A.45: Provide adequate capacity on boulevards and arterials to meet LOS standards, and to avoid traffic diversion to local streets or freeways.	Consistent
5-A.59: Work with Omnitrans to plan for bus shelters, boarding areas, transfer centers, bus pads in the right-of-way, and bus turnouts.	Consistent (with conditions of approval)
5-A.68: Provide for direct pedestrian paths and access from new developments to the nearest public transportation stop.	Consistent
Chapter 6: Vital Environment	
6-A.35: Promote the use of Low Impact Development strategies, BMPs, pervious paving materials, and on-site infiltration for treating and reducing stormwater runoff before it reaches the municipal storm-water system.	Consistent
6-A.43: Ensure that post-development peak stormwater runoff discharge rates do not exceed the estimated pre-development rate. Dry weather runoff from new development must not exceed the pre-development baseline flow rate to receiving waterbodies.	Consistent
Chapter 7: Healthy Community	
7-P.17: Achieve more walkable, livable neighborhoods by expanding the multi-modal transportation system and creating a safe, pedestrian-oriented environment.	Consistent
7-A.36: Discourage street closures; encourage creating new connections.	Consistent
7-P.22: Create complete neighborhoods with access to a range of day-to-day goods and services within walking distance of residences, including medical facilities, community services, youth programs, and employment opportunities, to increase the sense of social cohesion among residents.	Consistent
7-P.41: Ensure that new development is compatible with the noise environment by continuing to use potential noise exposure as a criterion in land use planning.	Consistent
2021-2029 Housing Element	
1.1 Provide adequate capacity to meet the Sites Inventory for Regional Housing Needs Assessment (RHNA).	Consistent
3.1: Incentivize development of affordable housing by leveraging density bonuses.	Consistent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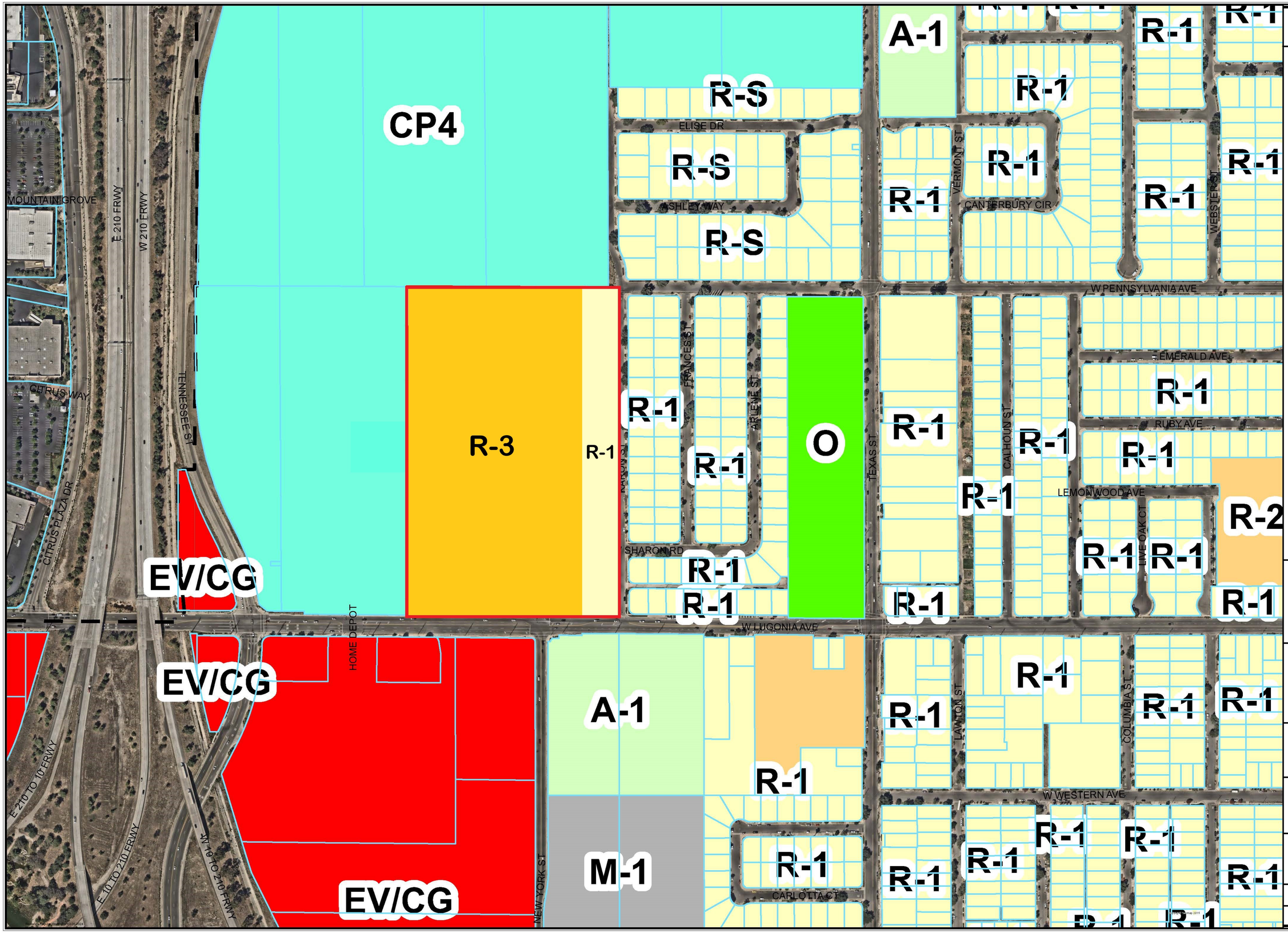
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Michael Baker
INTERNATIONAL

TRAFFIC STUDY
Neighborhoods at Lugonia Village
City of Redlands

Prepared for:
City of Redlands
35 Cajon Street, Suite 15A
Redlands, CA 92373

January 13, 2023

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1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The purpose of the Traffic Study (Study) is to document the traffic analysis findings of the proposed development of the Neighborhoods at Lugonia Village Project (Project) in the City of Redlands (City). Scenarios examined included Existing and Existing with Project. Key analysis measures evaluated included level of service (LOS) and delay. A separate memorandum documents the VMT Screening for this Project.

1.2 PROJECT DESCRIPTION

The Project proposes the construction of 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units. The Project plans to have three distinct residential land-uses, each with separate access. For the purposes of this Study, they are referred to as Neighborhoods A1, A2, and B. Neighborhood A1 consists of 430 multi-family dwelling units, Neighborhood A2 consists of 70 townhomes, and Neighborhood B consist of 19 single family dwelling units.

The study analyzed project-related traffic under two scenarios:

- Scenario A – Cul-de-sac Pennsylvania Avenue
- Scenario B – Pennsylvania Avenue Connection

Under Scenario A, the study analyzed the Project assuming a cul-de-sac on Pennsylvania Avenue just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street as documented in the Project site plan shown later in this report. Thus, the newly constructed Pennsylvania Avenue would only connect to Tennessee Street. Under Scenario B, the study analyzed the Project with an alternative access condition where Pennsylvania Avenue would extend from Karon Street west to Tennessee Street thus creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. The intersection of Pennsylvania Avenue and Karon Street would become a four-legged two-way stop-controlled intersection. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods A2 and B would experience different local distribution patterns.

In accordance with the Measure U Growth Management Initiative, the analysis scenarios are anticipated as follows:

1. Existing Conditions
2. Existing With Project Conditions (Scenario A)
3. Existing With Project Conditions (Scenario B)

The following study intersections with the City of Redlands and Caltrans jurisdiction were examined as part of this analysis:

1. W San Bernardino Avenue/I-210 Southbound Ramps
2. W San Bernardino Avenue / I-210 Northbound Ramps
3. Tennessee Street / Pennsylvania Avenue (Future)
4. Tennessee Street / W Lugonia Avenue
5. Tennessee Street / I-10 Westbound Ramps
6. Tennessee Street / I-10 Eastbound Ramps
7. W Lugonia Avenue / Citrus Plaza Drive
8. W Lugonia Avenue / Project Driveway (Future)
9. W Lugonia Avenue / New York Street and Project Driveway
10. W Lugonia Avenue / Karon Street
11. Pennsylvania Avenue / Karon Street

12. Pennsylvania Avenue / Texas Street
13. W Lugonia Avenue / Texas Street

1.3 ANALYSIS FINDINGS

The operational analysis findings are as follows:

Existing Condition

The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

Existing With Project (Scenario A)

The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at acceptable overall LOS D or better during both the AM Peak Hour and PM Peak Hour.

As there are no adverse effects at any of the study intersections with the addition of project related traffic; therefore, no other improvements are needed or proposed.

Existing With Project (Scenario B)

The analysis results show all intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Similar to Scenario A, since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

As there are no adverse effects at any of the study intersections with the addition of project related traffic; therefore, no other improvements are needed or proposed.

Vehicle Miles Traveled

A VMT assessment was prepared for the Neighborhoods at Lugonia Village Project under a separate memorandum.

1.4 ROADWAY IMPROVEMENTS

While the LOS analysis indicates that off-site roadway operational improvements are not required, the proposed Project would construct roadway network improvements associated with the development operations including:

- Half-width construction along W Lugonia Avenue Project frontage.
- Half-width construction along Pennsylvania Avenue Project frontage. The length of this improvement would vary between Scenario A and B since Scenario A ends at a cul-de-sac west of Karon Street while Scenario B extends all the way to Karon Street.
- Half-width construction along Karon Street Project frontage.
- Construct one-way-stop control at the new intersection of Tennessee Street and the planned Pennsylvania Avenue (#3). East leg of intersection to be full-width improvement.
- Construct a one-way-stop-controlled driveway to create a new T-intersection along W Lugonia Avenue, west of New York Street (#8).
- Construct a signal-controlled driveway at the intersection of W Lugonia Avenue and New York Street/Project Driveway (#9).
- Modify traffic signal at W Lugonia Avenue and New York Street/Project Driveway (#9) to accommodate new north intersection leg.
- Construct a full-width fourth leg of the stop control intersection of Pennsylvania Avenue and Karon Street (**Scenario B only**). Specifically, construct the west leg of the intersection to connect the newly constructed Pennsylvania Avenue to the existing three-legged intersection.

These improvements were assumed in the Existing With Project scenario traffic operations analysis. As there are no adverse effects at any of the study intersections with the addition of project related traffic; therefore, no other improvements are needed or proposed.

2 INTRODUCTION

The purpose of the Traffic Study is to document the traffic analysis findings of the proposed development of the Neighborhoods at Lugonia Village Project in the City of Redlands. Scenarios examined included Existing and Existing with Project. Key analysis measures evaluated included level of service (LOS) and vehicle delay. A separate memorandum documents the VMT Screening for this Project.

2.1 PROJECT DESCRIPTION

The Project proposes the construction of 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units. The Project plans to construct each residential land use with varying access. Neighborhood A1, consisting of 430 multi-family dwelling units, will have access via two driveways along W Lugonia Avenue. Neighborhood A2, consisting of 70 townhomes, will have access via a single driveway along the future planned Pennsylvania Street. Neighborhood B, consisting of 19 single family dwelling units, will have access provided via Karon Street. Regionally, the Project site is located within the City of Redlands (City), within the County of San Bernardino (County) as shown in **Exhibit 2-1**. Locally, the Project site location is along on the Northwest quadrant of the intersection of W. Lugonia Avenue and Karon Street, as shown in **Exhibit 2-2**.

EXHIBIT 2-1: PROJECT LOCATION

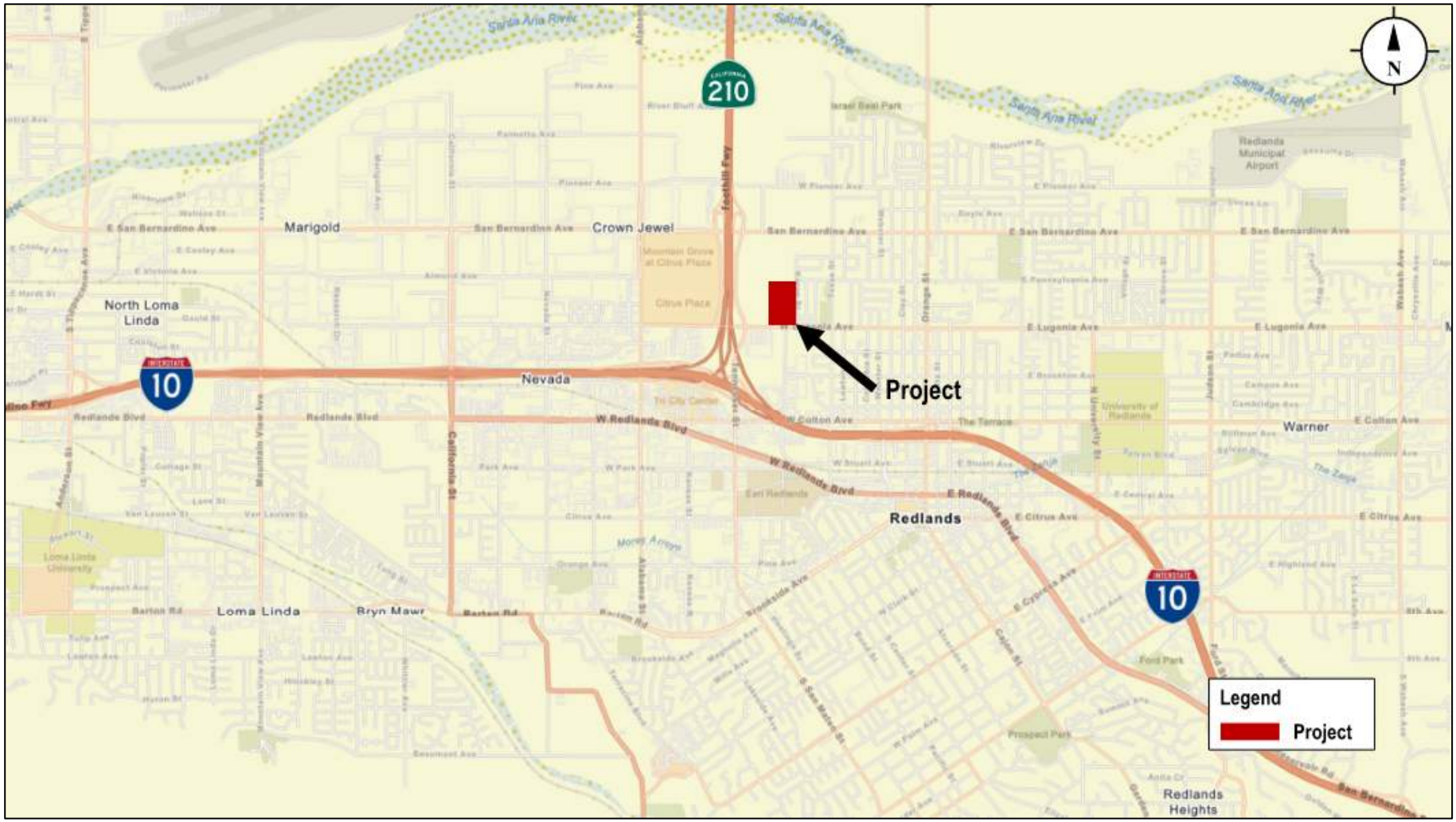


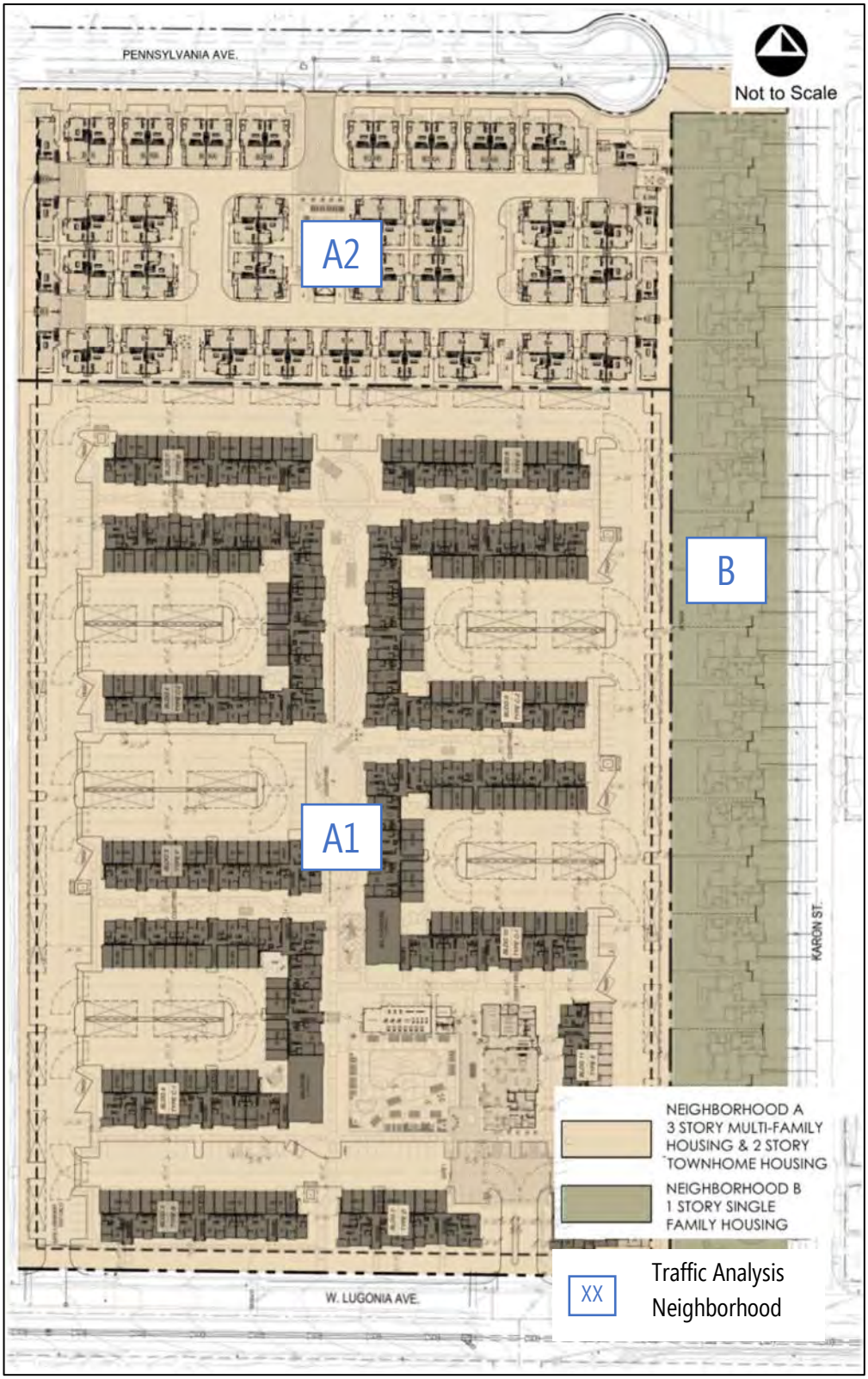
EXHIBIT 2-2: PROJECT SITE LOCATION



2.2 SITE PLAN

The Project condition site plan is shown in **Exhibit 2-3.** A total of 519 residences are expected: 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units. Neighborhood A1's access is along W Lugonia Avenue via two site driveways including one full access driveway and one exit only access driveway. Neighborhood A2's access is along Pennsylvania Avenue via one full access driveway. Neighborhood B's access is along Karon Street via individual residential driveways.

EXHIBIT 2-3: PROJECT SITE PLAN



Note:

1) Sourced from Architects Orange, Angeleno Associates Inc., and Archi2Group. Traffic Analysis Neighborhood labels added by MBI.
2) Site plan shows the Scenario A condition with a cul-de-sac on Pennsylvania Avenue.
3) Site plan depicts full-width construction on Pennsylvania Avenue rather than the recommended half-width construction.

2.3 ANALYSIS SCENARIOS

The study analyzed project-related traffic under two roadway network conditions:

- Scenario A – Cul-de-sac Pennsylvania Avenue
- Scenario B – Pennsylvania Avenue Connection

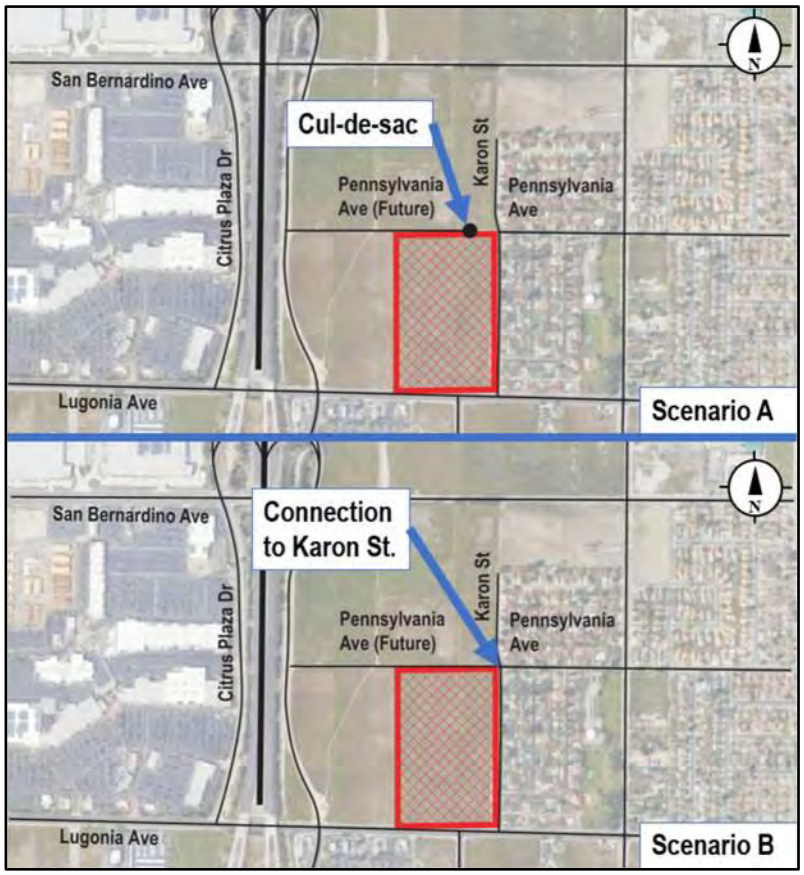
Under Scenario A, the study analyzed the Project assuming a cul-de-sac on Pennsylvania Avenue just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street as documented in the Project site plan. Thus, the newly constructed Pennsylvania Avenue would only connect to Tennessee Street. Under Scenario B, the study analyzed the Project with an alternative access condition where Pennsylvania Avenue would extend from Karon Street west to Tennessee Street thus creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. The intersection of Pennsylvania Avenue and Karon Street would become a four-legged two-way stop-controlled intersection. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods A2 and B would likely experience different local distribution patterns.

Exhibit 2-4 shows the difference along Pennsylvania Avenue between Scenario A and Scenario B. In accordance with the Measure U Growth Management Initiative, the analysis scenarios are anticipated as follows:

1. Existing Conditions
2. Existing With Project Conditions (Scenario A)
3. Existing With Project Conditions (Scenario B)

Michael Baker International (Michael Baker) coordinated with City staff on the study assumptions such as trip generation, trip distribution, study locations, scenarios, and study methodology. The approved scoping letter can be found in **Appendix A.**

EXHIBIT 2-4: SCENARIO A AND B COMPARISON



2.4 STUDY INTERSECTIONS

The following study intersections were examined as part of this analysis:

1. W San Bernardino Avenue/I-210 Southbound Ramps
2. W San Bernardino Avenue / I-210 Northbound Ramps
3. Tennessee Street / Pennsylvania Avenue (Future)
4. Tennessee Street / W Lugonia Avenue
5. Tennessee Street / I-10 Westbound Ramps
6. Tennessee Street / I-10 Eastbound Ramps
7. W Lugonia Avenue / Citrus Plaza Drive
8. W Lugonia Avenue / Project Driveway (Future)
9. W Lugonia Avenue / New York Street and Project Driveway
10. W Lugonia Avenue / Karon Street
11. Pennsylvania Avenue / Karon Street
12. Pennsylvania Avenue / Texas Street
13. W Lugonia Avenue / Texas Street

These thirteen (13) intersections have been identified in coordination with City staff as potential locations impacted by the proposed Project. It should be noted that Intersections #3 and #8 do not exist without the Project and were not analyzed under the Existing condition.

3 ANALYSIS METHODOLOGY

3.1 LEVEL OF SERVICE ANALYSIS METHODOLOGIES

As required by City of Redlands, this traffic study has been prepared in accordance with the *City of Redlands CEQA Assessment VMT Analysis Guidelines* (June 2020), the *City of Redlands Measure U Growth Management Initiative,* and the *County of San Bernardino Transportation Impact Study Guidelines* (July 9, 2019). The key measures of effectiveness for this study are level of service (LOS) and average vehicle delay in average seconds per vehicle.

LOS is commonly used as a qualitative description of intersection operation and is based on the type of traffic control and experienced delay at the intersection. The *Highway Capacity Manual* (HCM) 6th Edition published by the Transportation Research Board in 2016 was utilized in this analysis to determine the operating LOS at each of the study intersections. LOS can range from LOS A (free-flow conditions) to LOS F (severely congested conditions). Delay in average seconds per vehicle (sec/veh) passing through the intersection, is the primary measure of effectiveness for signalized, stop-controlled, and roundabout intersections. The corresponding average stopped delay experienced per vehicle by LOS is shown in **Table 3-1**.

TABLE 3-1: HCM INTERSECTION LEVEL OF SERVICE THRESHOLDS

Level of Service	Signalized Intersection Average Delay (seconds/vehicle)	Two-Way Stop-Controlled, All-Way Stop-Controlled, and Roundabout Control Delay (seconds/vehicle)
LOS A	$x \leq 10$	$x \leq 10$
LOS B	$10 < x \leq 20$	$10 < x \leq 15$
LOS C	$20 < x \leq 35$	$15 < x \leq 25$
LOS D	$35 < x \leq 55$	$25 < x \leq 35$
LOS E	$55 < x \leq 80$	$35 < x \leq 50$
LOS F	$80 < x$	$50 < x$

Notes:
1) If the volume-to-capacity ratio (v/c) > 1.0, LOS = F.
2) Sourced from *Highway Capacity Manual*, 6th Edition.

LOS is reported for the average stopped delay per vehicle for the overall intersection (all movements) for signalized intersections, all-way stop-controlled, and roundabout intersections. For one-way or two-way stop-controlled intersections, LOS is reported for the worst stop-controlled approach. LOS and delay for the intersection analysis was conducted with Synchro (version 11) software and HCM 6th Edition results were reported.

3.2 MEASURE U

Measure U is a local growth management initiative and contains policies for traffic LOS within the City of Redlands. As stated in Measure U, the City of Redlands has adopted LOS "C" or better as acceptable operating conditions for intersections during the peak hour. In accordance with the Measure U, the following guiding policies are used for level of service standards for traffic operations:

- *"5.20a* – Maintain LOS C or better as the standard at all intersections presently operating at LOS C or better."
- *"5.20b* – Within the area identified in GP Figure 5-1, including the unincorporated County area identified on GP Figure 5-1 as the "donut hole", maintain LOS C or better; however, accept a reduced LOS on a case-by-case basis upon approval by four-fifths (4/5ths) vote of the total authorized membership of the City Council."
- *"5.20c* – Where the current LOS at a location within the City of Redlands is below the LOS C standard, no development project shall be approved that cannot be mitigated so that it does not reduce the existing level of service at the location except as provided in Section 5.20b."

The Project is not located in the unincorporated County area known as the "donut hole" therefore 5.20b does not apply. Only 5.20a and 5.20c were considered for this Project.

3.3 CALTRANS FACILITIES

Within the study area, several study intersections are identified under Caltrans jurisdiction. These include the intersections of: W San Bernardino Avenue & I-210 Southbound Ramps (#1), W San Bernardino Avenue / I-210 Northbound Ramps (#2), Tennessee Street / I-10 Westbound Ramps (#5), and Tennessee Street / I-10 Eastbound Ramps (#6).

3.4 PERFORMANCE CRITERIA

The various performance criteria are summarized in **Table 3-2**.

TABLE 3-2: PERFORMANCE CRITERIA

Jurisdiction	Acceptable Performance Criteria	Source
City of Redlands	Preferred: LOS C or better Minimum: Maintain existing LOS (if below LOS C)	City of Redlands Measure U Growth Management Initiative (December 1997)
County of San Bernardino	LOS D or better	San Bernardino County Transportation Impact Study Guidelines (July 2019)
Caltrans	Preferred: LOS C or better Minimum: LOS D or better (Maintain existing LOS if below LOS D)	Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002)

For the purpose of this evaluation, LOS D has been established as the minimum acceptable conditions for Caltrans facilities. For City facilities, the following thresholds would require improvements:

- If the addition of project related traffic causes an intersection's peak hour LOS to worsen from acceptable (LOS C or better) to unacceptable (LOS D, E, or F), the project shall identify improvements to improve operations to LOS C or better; or
- Where the current LOS is below the LOS C standard (LOS D, E, or F) without the project and the addition of project related traffic worsens the pre-project level of service grade, the project shall identify improvements to maintain the pre-project level of service grade.

4 EXISTING CONDITION

4.1 ROADWAY NETWORK

The analysis study area roadway network is described below.

W Lugonia Avenue west of Tennessee Street is generally a 4-lane undivided roadway in the City of Redlands. East of Tennessee Street, W Lugonia Avenue is generally a 4-lane undivided roadway with one travel lane in the westbound direction and 2 travel lanes in the eastbound direction. Regionally, it travels east-west from west of Research Drive to Wabash Avenue in the East. The City of Redlands General Plan dated December 2017 (Redlands General Plan) identifies the section of W Lugonia Ave along the Project site frontage as a Major Arterial. To the west of the Project area, E. 7th Street is classified as a Minor Arterial. The posted speed limit on W Lugonia Avenue within the Project vicinity is 35 miles per hour (mph).

W San Bernardino Ave west of Citrus Plaza Drive is a four-lane divided roadway in the City of Redlands. East of Tennessee Avenue, W San Bernardino Avenue is a 2-lane undivided roadway. Regionally, it travels east-west from Tippecanoe Avenue in the west to Crafton Ave in the east. Within the City, the roadway has an interchange with I-210. The Redlands General Plan identifies W San Bernardino Avenue as a Major Arterial. The current posted speed limit on W San Bernardino Avenue is 45 mph.

Tennessee Street north of W Lugonia Ave is a two-lane divided roadway in the City of Redlands. South of W Lugonia Avenue, Tennessee Street is a four-lane undivided roadway. Regionally it travels north-south from W San Bernardino Avenue in the north to Brookside Avenue in the south. Within the City, the roadway has an interchange with I-10. The Redlands General Plan identifies Tennessee Street as a Minor Arterial.

New York Street is a two-lane undivided roadway in the City of Redlands. Regionally, it travels north-south from W Lugonia Avenue in the north to Texas Street in the south. The Redlands General Plan identifies New York Street as a Collector. The current posted speed limit on New York Street is 40 mph.

Karon Street is a two-lane undivided roadway in the City of Redlands. It travels north-south from near Elise Drive in the north to W Lugonia Avenue in the south. The Redlands General Plan identifies Karon Street as a Local Road. The prima facie speed limit is 25 mph.

Pennsylvania Avenue is a two-lane undivided roadway within the Project limits in the City of Redlands. It travels east-west from Judson Street in the east to Karon Street in the west. Pennsylvania Avenue does not currently exist between Tennessee Street and Karon Street. While Pennsylvania Avenue between Tennessee Street and Karon Street is not included in the Redlands General Plan, it identifies Pennsylvania Avenue east of Karon Street as a Local Road. The posted speed limit is 30 mph.

Texas Street is a two-lane undivided roadway within the Project limits in the City of Redlands. South of W Colton Avenue, it is a four-lane undivided roadway. It travels north-south from near Domestic Avenue in the north to W Redlands Boulevard in the south. The Redlands General Plan identifies Pennsylvania Avenue within the Project limits as a Minor Arterial. The posted speed limit is 40 mph.

Exhibit 4-1 shows the Existing study intersection lane geometry. **Exhibit 4-2** shows the Redlands General Plan Circulation Element Roadway Classifications.

EXHIBIT 4-1: EXISTING LANE GEOMETRY

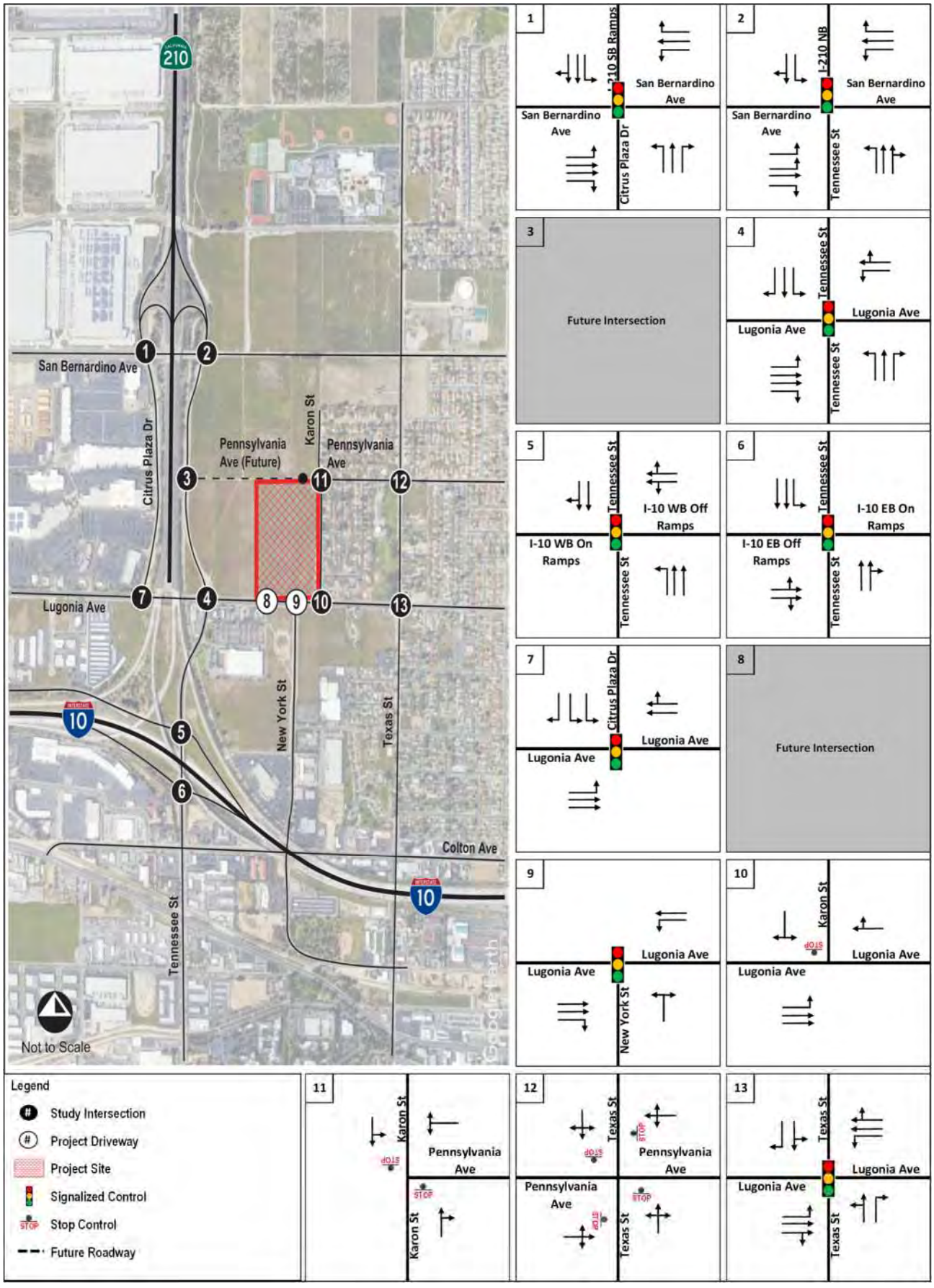
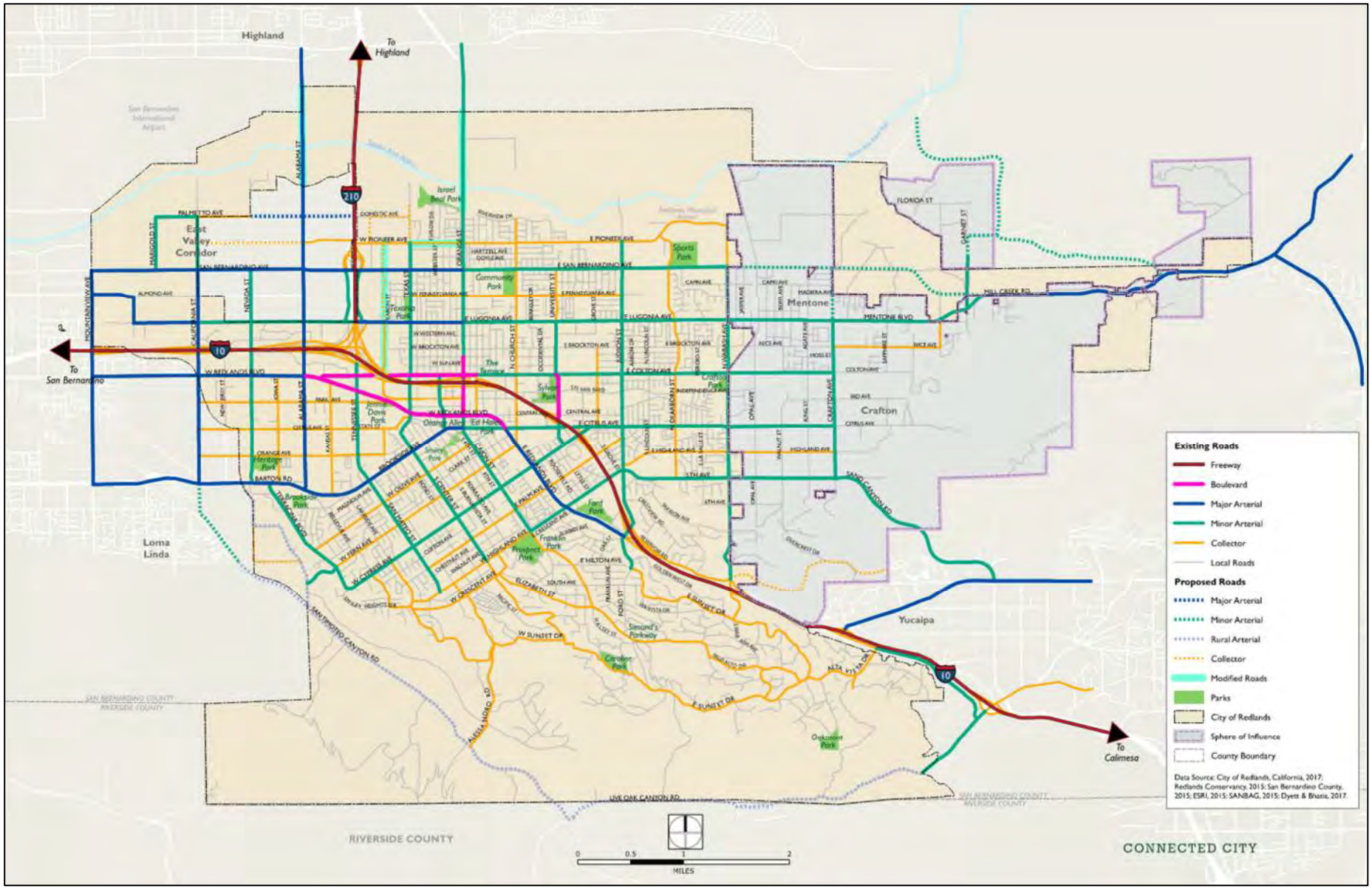


EXHIBIT 4-2: REDLANDS ROADWAY CLASSIFICATION



Note:

1) Sourced from City of Redlands General Plan (December 2017).

4.2 STUDY INTERSECTIONS CHARACTERISTICS

Table 4-1 lists the study intersections examined as part of this analysis. The control type and jurisdiction are also provided.

TABLE 4-1: STUDY INTERSECTIONS

ID	Intersection	Control Type	Jurisdiction
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans
3	Tennessee Street / Pennsylvania Avenue (Future)	OWSC	City of Redlands
4	Tennessee Street / W Lugonia Avenue	SIG	City of Redlands
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	City of Redlands
8	W Lugonia Avenue / Project Driveway (Future)	OWSC	City of Redlands
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	City of Redlands
10	W Lugonia Avenue / Karon Street	OWSC	City of Redlands
11	Pennsylvania Avenue / Karon Street	TWSC	City of Redlands
12	Pennsylvania Avenue / Texas Street	AWSC	City of Redlands
13	W Lugonia Avenue / Texas Street	SIG	City of Redlands

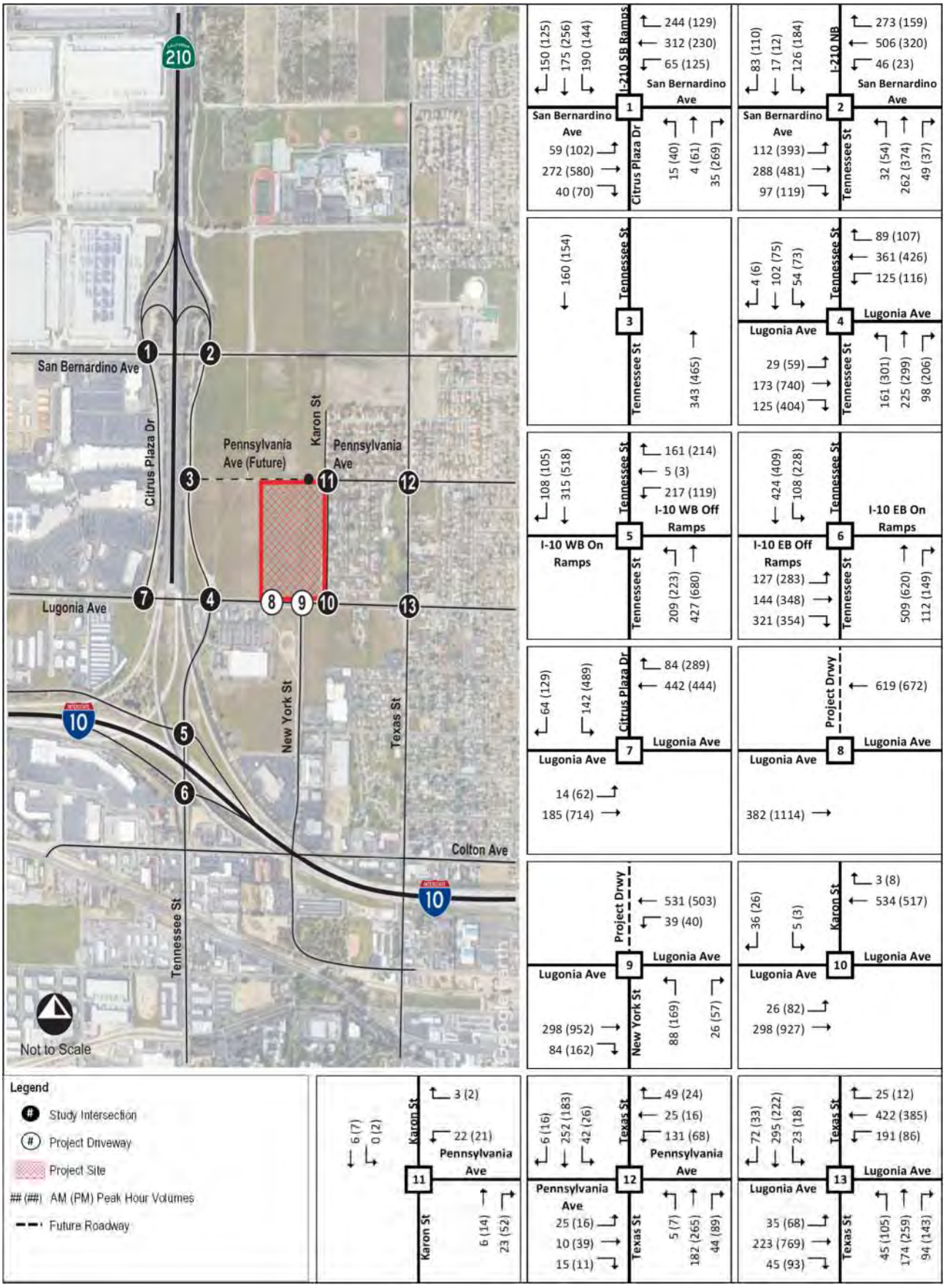
Notes:

1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.

4.3 EXISTING TRAFFIC VOLUMES

Traffic counts were collected on Wednesday June 8th, 2022 and on Thursday November 17th, 2022 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. Data collected included pedestrian, bicycle, passenger cars, and heavy vehicle counts. The counts used in this analysis represent the peak hour of each period (AM Peak Hour and PM Peak Hour). In coordination with City staff, it was determined a COVID-19 pandemic adjustment factor would not be applied to the traffic counts given the easing of pandemic conditions and restrictions at both the state and county levels. **Appendix B** contains detailed volume development information. **Exhibit 4-3** shows the Existing Peak Hour traffic volumes.

EXHIBIT 4-3: EXISTING PEAK HOUR VOLUMES



4.4 EXISTING LOS ANALYSIS

Table 4-2 summarizes the Existing Year Peak Hour Synchro intersection analysis results. The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- # 4 – Tennessee Street and W Lugonia Avenue operates at an overall LOS D during the PM Peak Hour.
- #13 – W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F during the PM Peak Hour.

All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour. The Existing Year AM Peak Hour analysis worksheets are contained in **Appendix C** and the Existing Year PM Peak Hour analysis worksheets are contained in **Appendix D**.

TABLE 4-2: EXISTING INTERSECTION ANALYSIS RESULTS

ID	Intersection	Control Type	Jurisdiction	Existing Year			
				AM Peak Hour		PM Peak Hour	
				LOS	Delay	LOS	Delay
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans	C	21.1	C	25.4
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans	C	31.6	C	30.4
3	Tennessee Street / Pennsylvania Avenue	--	Redlands	*Intersection Does Not Exist Under This Condition*			
4	Tennessee Street / W Lugonia Avenue	SIG	Redlands	C	23.4	**D**	**44.4**
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans	C	21.3	B	18.4
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans	C	28.0	D	46.9
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	Redlands	A	9.8	B	13.2
8	W Lugonia Avenue / Project Driveway	--	Redlands	*Intersection Does Not Exist Under This Condition*			
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	Redlands	B	11.2	B	14.4
10	W Lugonia Avenue / Karon Street	OWSC	Redlands	B	13.7	B	14.1
11	Pennsylvania Avenue / Karon Street	TWSC	Redlands	A	9.4	A	9.5
12	Pennsylvania Avenue / Texas Street	AWSC	Redlands	B	11.1	B	10.9
13	W Lugonia Avenue / Texas Street	SIG	Redlands	C	22.3	**F**	**138.2**

Notes:

1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.
2) Overall intersection LOS provided for signalized and AWSC intersections. Worst-approach LOS provided for TWSC and OWSC intersections.
3) City Intersections – LOS C or better is the preferred acceptable operation at City intersections. Bold text with yellow highlight indicates LOS D, E, or F.
4) Caltrans Intersections – LOS D or better is the acceptable operation at Caltrans intersections. No intersections operate at LOS E or F.
5) Delay shown in average seconds per vehicle.

5 PROPOSED PROJECT

The Project proposes to construct 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling unit on the Northwest quadrant of the Intersection of W. Lugonia Avenue and Karon Street. The Project is anticipated to be built out by Year 2024. The Project plans to have three distinct residential land-uses, each with separate access. For the purposes of this Study, they are referred to as Neighborhood A1, A2, and B. Neighborhood A1, consisting of 430 multi-family dwelling units, will have a full access driveway at the intersection of W Lugonia Avenue and New York Street and an exit only driveway located along W Lugonia Avenue, west of New York Street. Neighborhood A2, consisting of 70 townhomes, will have a single full access driveway along the future planned Pennsylvania Street. Neighborhood B, consisting of 19 single family dwelling units, will have access provided via Karon Street.

5.1 PROJECT FORECAST TRIP GENERATION

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition) was used to calculate the forecast vehicle trips generated by the proposed Project. **Table 5-1** shows the trip generation rates for the three housing types (Single Family Detached, Single Family Attached, and Multifamily Low-Rise). **Table 5-2** summarizes the vehicular trips forecast to be generated by the Project. As shown, the Project is anticipated to generate approximately 3,581 daily trips with 219 AM Peak Hour trips and 277 PM Peak Hour trips.

TABLE 5-1: TRIP GENERATION RATES

Land Use	ITE Code	Neighborhood	Daily Trips Rate	AM Peak Hour			PM Peak Hour		
				Rate	In /	Out	Rate	In /	Out
Single-Family Detached	210	Neighborhood B	9.43 / DU	0.70	26% /	74%	0.94	63% /	37%
Single-Family Attached	215	Neighborhood A2	7.2 / DU	0.48	31% /	69%	0.57	57% /	43%
Multifamily (Low Rise)	220	Neighborhood A1	6.74 / DU	0.40	24% /	76%	0.51	63% /	37%

Note:

1) Sourced from ITE *Trip Generation Manual*, 11th Edition.
2) DU = Dwelling Units.

TABLE 5-2: ESTIMATED SITE TRIPS

Land Use	ITE Code	Neighborhood	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
					Volume	In	Out	Volume	In	Out
Single-Family Detached	210	Neighborhood B	19 DU	179	13	3	10	18	11	7
Single-Family Attached	215	Neighborhood A2	70 DU	504	34	11	23	40	23	17
Multifamily (Low Rise)	220	Neighborhood A1	430 DU	2,898	172	41	131	219	138	81
Total			**519 DU**	**3,581**	**219**	**55**	**164**	**277**	**172**	**105**

Notes:

1) DU = Dwelling Units.

5.2 PROJECT SCENARIOS

The study analyzed project-related traffic under two roadway network scenarios:

- Scenario A – Cul-de-sac Pennsylvania Avenue
- Scenario B – Pennsylvania Avenue Connection

Under Scenario A, the study analyzed the Project assuming a cul-de-sac on Pennsylvania Avenue just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street as documented in the Project site plan. Thus, the newly constructed Pennsylvania Avenue would only connect to Tennessee Street. Under Scenario B, the study analyzed the Project with an alternative access condition where Pennsylvania Avenue would extend from Karon Street west to Tennessee Street thus creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. The intersection of Pennsylvania Avenue and Karon Street would become a four-legged two-way stop-controlled intersection. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods A2 and B would likely experience different local distribution patterns.

Exhibit 5-1 shows the With Project Scenario A and **Exhibit 5-2** shows the With Project Scenario B lane configurations. Under both Scenario A and Scenario B, half-width construction is proposed along the Project frontage. Along Tennessee Street, the intersection with Pennsylvania Avenue (#3) will be constructed under both Project Scenarios, providing new access to the Neighborhood A2. Along W Lugonia Avenue, the intersection with the Project Driveway (#8) will be constructed under both Project Scenarios, providing exit only access from Neighborhood A1. The intersection of W Lugonia Avenue and New York Street/Project Driveway (#9) will also be modified under both Project Scenarios, providing full access to Neighborhood A1. Additionally, along W Lugonia avenue, an additional westbound through lane is provided due to half-width improvements along the Project frontage. Under Scenario B only, the stop-controlled intersection of Pennsylvania Avenue and Karon Street will be constructed, providing additional access choices to Neighborhood A2 and Neighborhood B.

EXHIBIT 5-1: SCENARIO A LANE CONFIGURATION

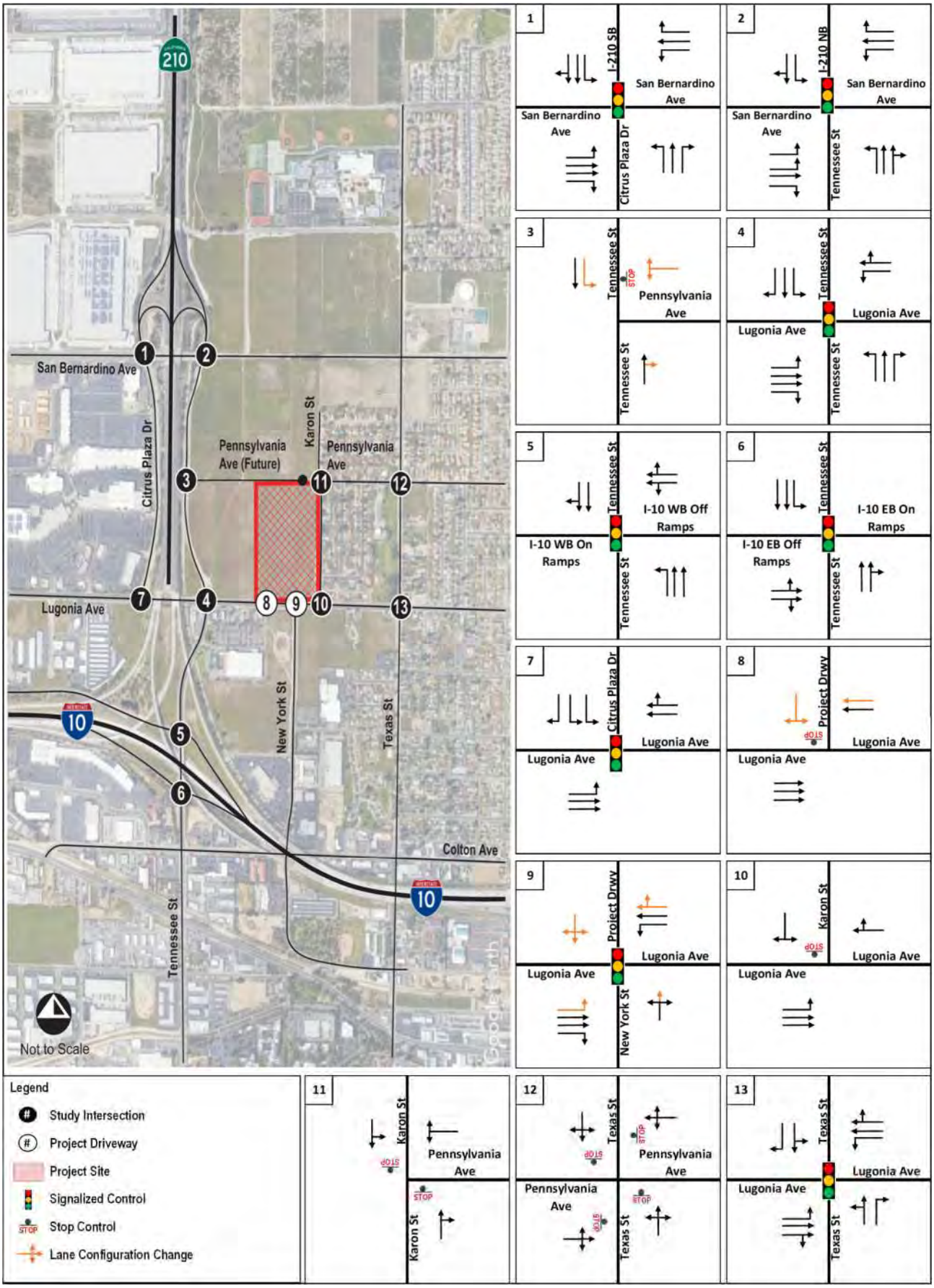
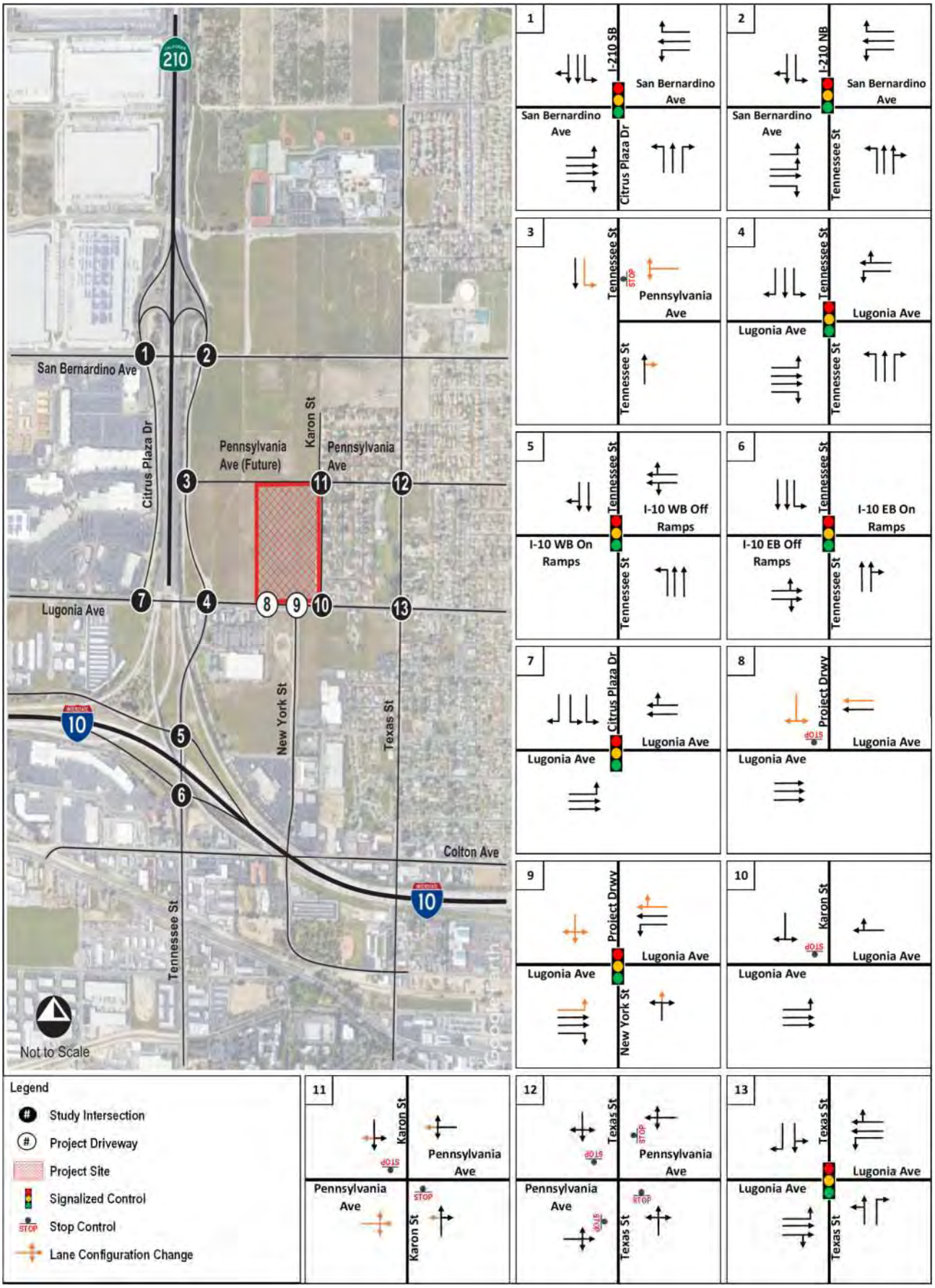


EXHIBIT 5-2: SCENARIO B LANE CONFIGURATION



5.3 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The regional distribution is consistent between both Scenario A and Scenario B. Only local distribution changes are expected under Scenario A and Scenario B. The regional distribution trends for the estimated project trips are as follows:

- 10% to the North via I-210
- 30% to the West via I-10
- 10% to the East Via I-10
- 15% toward East Redlands
- 5% toward South Redlands
- 30% toward West Redlands

As shown in the site plan, the Project is proposing three distinct residential land-uses, each with separate access. **Exhibits 5-3, 5-4,** and **5-5** show the **Scenario A** trip distribution by turning movement at the proposed study intersections. The **Scenario A** trip assignment by turning movement for each neighborhood and the combined Project are shown in **Exhibits 5-6, 5-7, 5-8, and 5-9**.

Exhibits 5-10, 5-11, and **5-12** show the **Scenario B** trip distribution by turning movement at the proposed study intersections under. The **Scenario B** trip assignment by turning movement for each neighborhood and the combined Project are shown in **Exhibits 5-13, 5-14, 5-15, and 5-16**.

EXHIBIT 5-3: SCENARIO A: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD A1)



EXHIBIT 5-4: SCENARIO A: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD A2)



EXHIBIT 5-5: SCENARIO A: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD B)



EXHIBIT 5-6: SCENARIO A: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD A1)



EXHIBIT 5-7: SCENARIO A: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD A2)



EXHIBIT 5-8: SCENARIO A: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD B)



EXHIBIT 5-9: SCENARIO A: TOTAL INTERSECTION PROJECT TRIPS



EXHIBIT 5-10: SCENARIO B: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD A1)



EXHIBIT 5-11: SCENARIO B: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD A2)



EXHIBIT 5-12: SCENARIO B: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD B)



EXHIBIT 5-13: SCENARIO B: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD A1)



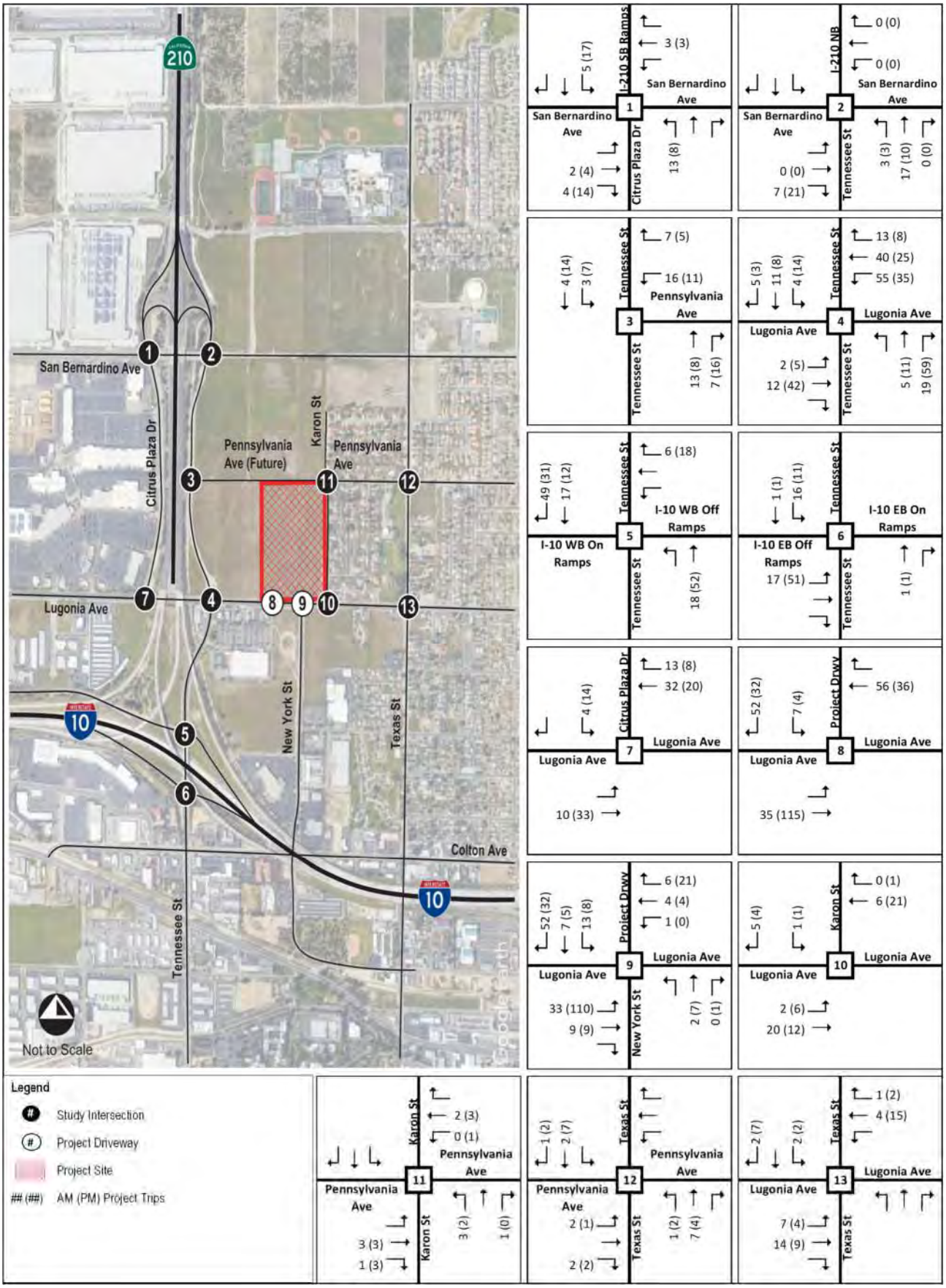
EXHIBIT 5-14: SCENARIO B: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD A2)



EXHIBIT 5-15: SCENARIO B: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD B)



EXHIBIT 5-16: SCENARIO B: TOTAL INTERSECTION PROJECT TRIPS



6 EXISTING WITH PROJECT (SCENARIO A)

6.1 EXISTING WITH PROJECT TRAFFIC VOLUMES

The Existing with Project (Scenario A) traffic volumes were developed by adding the forecast Scenario A Project trips to the Existing traffic volumes. **Exhibit 6-1** shows the Existing with Project (Scenario A) Peak Hour traffic volumes. Scenario A assumes a cul-de-sac on Pennsylvania Avenue just west of the intersection of Pennsylvania Avenue and Karon Street. Under the With Project scenario, the intersections of Tennessee Street and Pennsylvania Avenue (#3) and W Lugonia Avenue and Project Driveway (#8) are expected to be constructed, providing access to the site. The intersection of Tennessee Street and Pennsylvania Avenue (#3) will provide full-access and the W Lugonia Avenue and Project Driveway (#8) will provide exit only access from the site. **Appendix B** contains detailed volume development information.

6.2 EXISTING YEAR WITH PROJECT LOS ANALYSIS

Table 6-1 summarizes the Existing Year With Project (Scenario A) Peak Hour Synchro intersection analysis results. The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- #4 – Tennessee Street and W Lugonia Avenue operates at an overall LOS D during the PM Peak Hour.
- #13 – W Lugonia Avenue and Texas Street operates at an overall LOS F during the PM Peak Hour.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM and PM peak hours. The Existing Year With Project (Scenario A) AM Peak Hour analysis worksheets are contained in **Appendix E** and the Existing Year With Project (Scenario A) PM Peak Hour analysis worksheets are contained in **Appendix F**.

EXHIBIT 6-1: EXISTING WITH PROJECT (SCENARIO A) PEAK HOUR VOLUMES

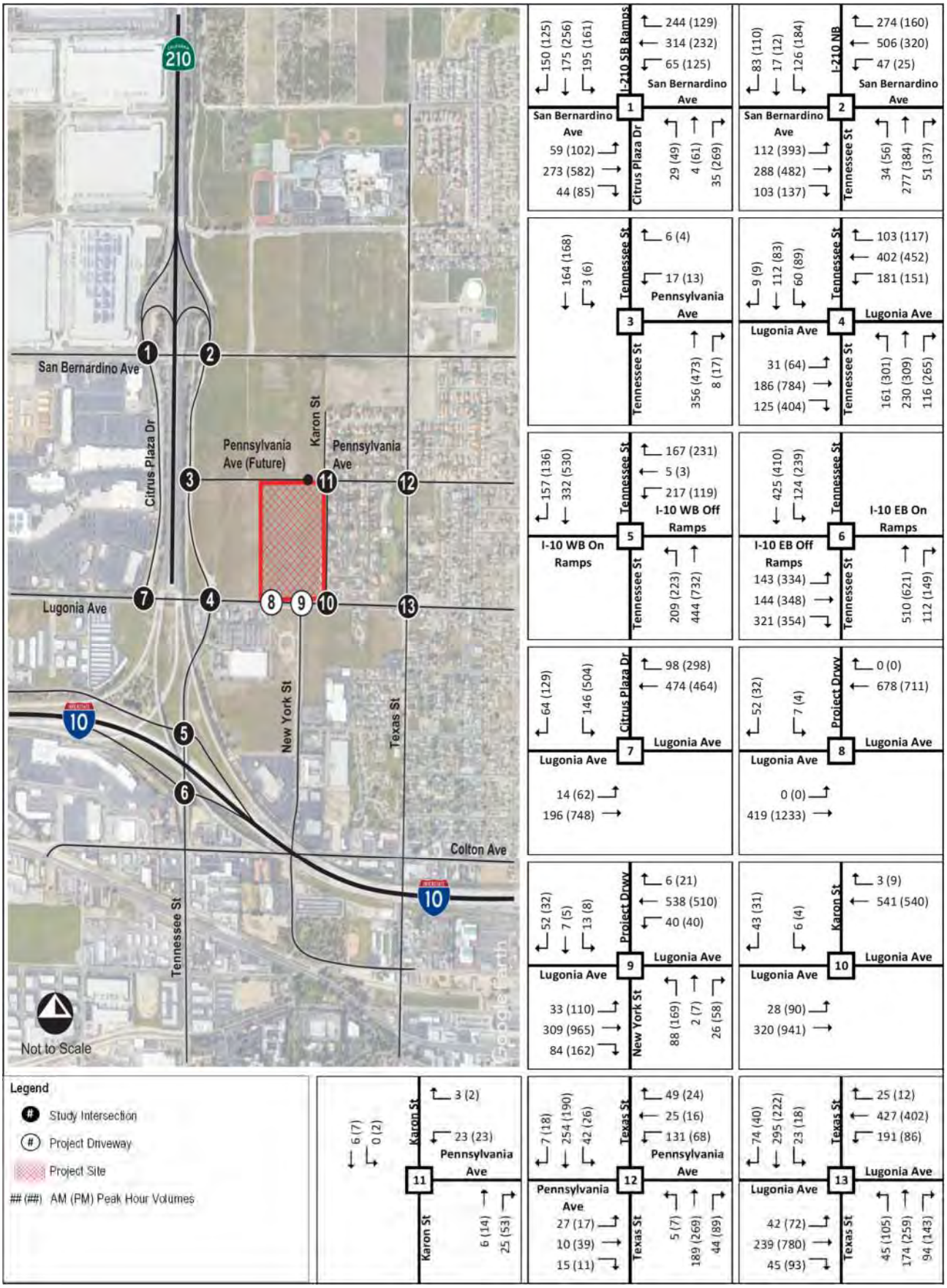


TABLE 6-1: EXISTING YEAR WITH PROJECT (SCENARIO A) INTERSECTION ANALYSIS RESULTS

ID	Intersection	Control Type	Jurisdiction	Existing Year				Existing Year With Project (Scenario A)				Adverse Effect?	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
				LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	AM	PM
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans	C	21.1	C	25.4	C	21.4	C	25.9	No	No
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans	C	31.6	C	30.4	C	32.2	C	30.7	No	No
3	Tennessee Street / Pennsylvania Avenue	OWSC	Redlands	*Intersection Does Not Exist Under This Condition*				B	12.3	B	13.9	No	No
4	Tennessee Street / W Lugonia Avenue	SIG	Redlands	C	23.4	**D**	**44.4**	C	30.3	**D**	**54.2**	No	No
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans	C	21.3	B	18.4	C	21.1	B	18.8	No	No
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans	C	28.0	D	46.9	C	28.7	D	53.1	No	No
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	Redlands	A	9.8	B	13.2	A	9.8	B	13.5	No	No
8	W Lugonia Avenue / Project Driveway	OWSC	Redlands	*Intersection Does Not Exist Under This Condition*				B	12.0	B	12.1	No	No
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	Redlands	B	11.2	B	14.4	B	10.8	B	13.7	No	No
10	W Lugonia Avenue / Karon Street	OWSC	Redlands	B	13.7	B	14.1	B	14.1	B	14.9	No	No
11	Pennsylvania Avenue / Karon Street	TWSC	Redlands	A	9.4	A	9.5	A	9.4	A	9.5	No	No
12	Pennsylvania Avenue / Texas Street	AWSC	Redlands	B	11.1	B	10.9	B	11.3	B	11.1	No	No
13	W Lugonia Avenue / Texas Street	SIG	Redlands	C	22.3	**F**	**138.2**	C	23.1	**F**	**138.2**	No	No

Notes:

1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.
2) Overall intersection LOS provided for signalized and AWSC intersections. Worst-approach LOS provided for TWSC and OWSC intersections.
3) City Intersections – LOS C or better is the preferred acceptable operation at City intersections. Bold text with yellow highlight indicates LOS D, E, or F.
4) Caltrans Intersections – LOS D or better is the acceptable operation at Caltrans intersections. No intersections operate at LOS E or F.
5) Adverse effect determined if With Project scenario degrades operations below the Existing Conditions without Project level of service grade.
6) Delay shown in average seconds per vehicle.

7 EXISTING WITH PROJECT (SCENARIO B)

7.1 EXISTING WITH PROJECT TRAFFIC VOLUMES

The Existing with Project (Scenario B) traffic volumes were developed by adding the forecast Scenario B Project trips to the Existing traffic volumes. Additionally, redistribution of the Existing local traffic (non-Project traffic) was made to account for the new complete connection along Pennsylvania Avenue between Tennessee Street and Karon Street and potential changes that would result in the general local traffic circulation. **Exhibit 7-1** shows the Existing with Project (Scenario B) Peak Hour traffic volumes. Scenario B assumes Pennsylvania Avenue connects to Karon Street in a four-legged intersection. Under the With Project scenario, the intersections of Tennessee Street and Pennsylvania Avenue (#3) and W Lugonia Avenue and Project Driveway (#8) are expected to be constructed, providing access to the site. The intersection of Tennessee Street and Pennsylvania Avenue (#3) will provide full-access and the W Lugonia Avenue and Project Driveway (#8) will provide exit only access from the site. **Appendix B** contains detailed volume development information.

7.2 EXISTING YEAR WITH PROJECT LOS ANALYSIS

Table 7-1 summarizes the Existing Year With Project (Scenario B) Peak Hour Synchro intersection analysis results. The analysis results show all intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- #4 – Tennessee Street and W Lugonia Avenue operates at an overall LOS D during the PM Peak Hour.
- #13 – W Lugonia Avenue and Texas Street operates at an overall LOS F during the PM Peak Hour.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour. The Existing Year With Project (Scenario B) AM Peak Hour analysis worksheets are contained in **Appendix G** and the Existing Year With Project (Scenario B) PM Peak Hour analysis worksheets are contained in **Appendix H**.

EXHIBIT 7-1: EXISTING WITH PROJECT (SCENARIO B) PEAK HOUR VOLUMES

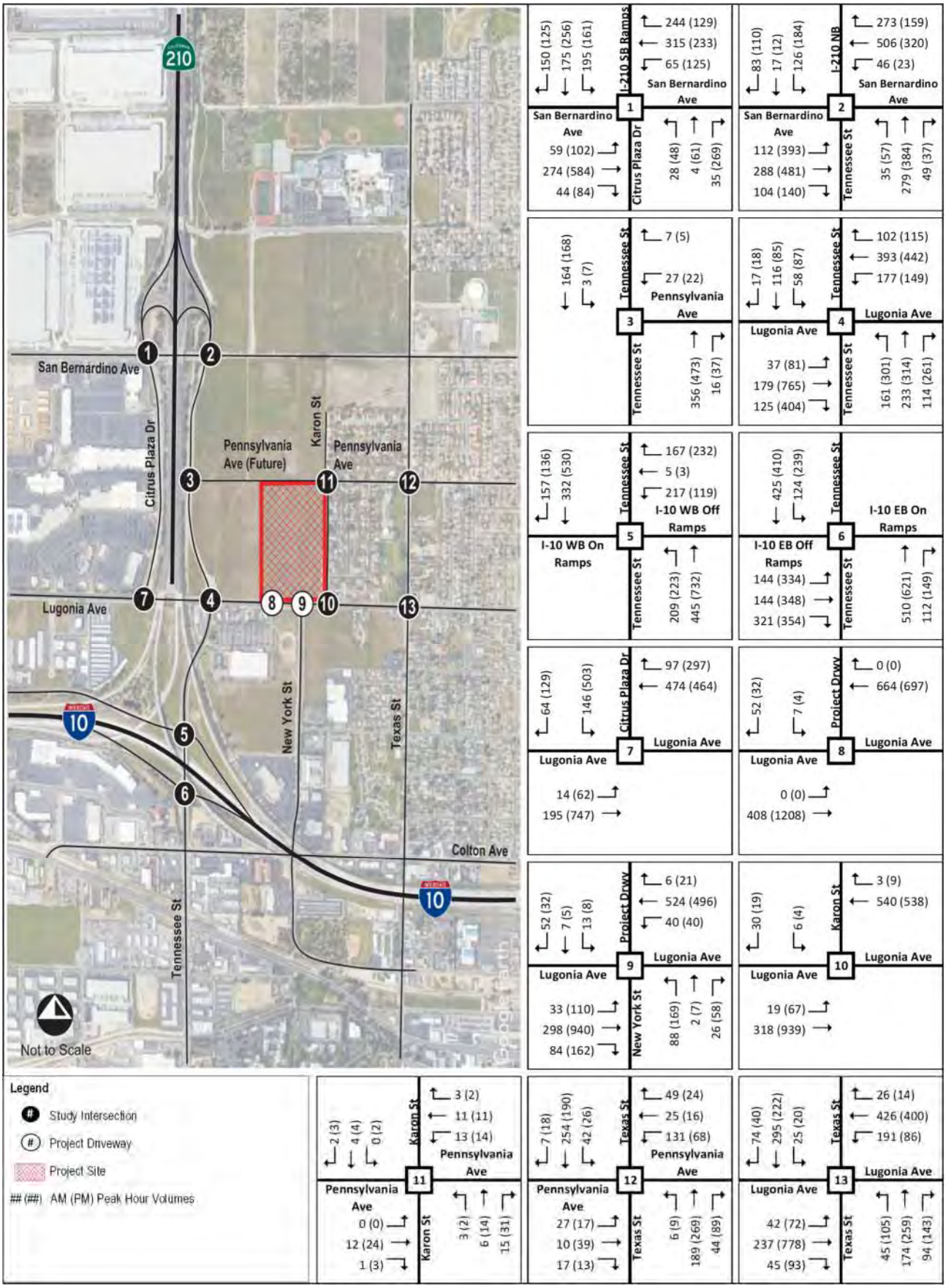


TABLE 7-1: EXISTING YEAR WITH PROJECT (SCENARIO B) INTERSECTION ANALYSIS RESULTS

ID	Intersection	Control Type	Jurisdiction	Existing Year				Existing Year With Project (Scenario B)				Adverse Effect?	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
				LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	AM	PM
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans	C	21.1	C	25.4	C	21.4	C	25.9	No	No
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans	C	31.6	C	30.4	C	32.1	C	30.6	No	No
3	Tennessee Street / Pennsylvania Avenue	OWSC	Redlands	*Intersection Does Not Exist Under This Condition*				B	12.7	B	14.5	No	No
4	Tennessee Street / W Lugonia Avenue	SIG	Redlands	C	23.4	**D**	**44.4**	C	29.6	**D**	**54.5**	No	No
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans	C	21.3	B	18.4	C	21.1	B	18.9	No	No
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans	C	28.0	D	46.9	C	28.7	D	53.1	No	No
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	Redlands	A	9.8	B	13.2	A	9.8	B	13.5	No	No
8	W Lugonia Avenue / Project Driveway	OWSC	Redlands	*Intersection Does Not Exist Under This Condition*				B	11.9	B	12.0	No	No
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	Redlands	B	11.2	B	14.4	B	10.8	B	13.6	No	No
10	W Lugonia Avenue / Karon Street	OWSC	Redlands	B	13.7	B	14.1	B	13.9	C	15.2	No	No
11	Pennsylvania Avenue / Karon Street	TWSC	Redlands	A	9.4	A	9.5	A	9.1	A	9.2	No	No
12	Pennsylvania Avenue / Texas Street	AWSC	Redlands	B	11.1	B	10.9	B	11.3	B	11.2	No	No
13	W Lugonia Avenue / Texas Street	SIG	Redlands	C	22.3	**F**	**138.2**	C	24.0	**F**	**138.0**	No	No

Notes:

1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.
2) Overall intersection LOS provided for signalized and AWSC intersections. Worst-approach LOS provided for TWSC and OWSC intersections.
3) City Intersections – LOS C or better is the preferred acceptable operation at City intersections. Bold text with yellow highlight indicates LOS D, E, or F.
4) Caltrans Intersections – LOS D or better is the acceptable operation at Caltrans intersections. Bold red text with gray highlight indicates LOS E or F.
5) Adverse effect determined if With Project scenario degrades operations below the Existing Conditions without Project level of service grade.
6) Delay shown in average seconds per vehicle.

8 PROJECT RELATED IMPROVEMENTS

While the LOS analysis indicates that off-site roadway operational improvements are not required, the proposed Project would construct roadway network improvements associated with the development operations including:

- Half-width construction along W Lugonia Avenue Project frontage.
- Half-width construction along Pennsylvania Avenue Project frontage. The length of this improvement would vary between Scenario A and B since Scenario A ends at a cul-de-sac under west of Karon Street while Scenario B extends all the way to Karon Street.
- Half-width construction along Karon Street Project frontage.
- Construct one-way-stop control at the new intersection of Tennessee Street and the planned Pennsylvania Avenue (#3). East leg of intersection to be full-width improvement.
- Construct a one-way-stop-controlled driveway to create a new T-intersection along W Lugonia Avenue, west of New York Street (#8).
- Construct a signal-controlled driveway at the intersection of W Lugonia Avenue and New York Street/Project Driveway (#9).
- Modify traffic signal at W Lugonia Avenue and New York Street/Project Driveway (#9) to accommodate new north intersection leg.
- Construct a full-width fourth leg of the stop control intersection of Pennsylvania Avenue and Karon Street (**Scenario B only**). Specifically, construct the west leg of the intersection to connect the newly constructed Pennsylvania Avenue to the existing three-legged intersection.

The Project would widen W Lugonia Avenue along the Project frontage to a total curb-to-curb width of approximately 80-feet. On the north side of the street, this width would provide a 5-foot sidewalk and 6 feet landscape strip, mirroring the south side of the street. On Pennsylvania Avenue, along the Project frontage, a total curb-to-curb width of approximately 32' will be provided. On the south side of the street, this width would provide a 5-foot sidewalk and 6 feet landscape strip. North of the Project frontage, Pennsylvania Avenue will be wide enough to receive future additional widening improvements by others to mirror the south side of the street. On Karon Street, along the Project frontage, a total curb-to-curb width of approximately 36' will be provided. On the west side of the street, this width would provide a 5-foot sidewalk and 6 feet landscape strip, mirroring the east side of the street.

These improvements were assumed in the Existing With Project scenario traffic operations analysis. As shown in **Tables 6-1** and **7-1**, there are no projected adverse effects at any of the study intersections with the addition of project-related traffic. Therefore, no other improvements are needed or proposed.

9 VMT ASSESSMENT

To satisfy California Environmental Quality Act (CEQA), a VMT assessment was prepared for the Neighborhoods at Lugonia Village Project under a separate memorandum. The VMT memorandum includes the project screening assumptions and methodologies.

10 FINDINGS AND RECOMMENDATIONS

Table 9-1 summarizes the intersection analysis results for all scenarios. The key findings are summarized below:

Existing Condition

The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

Existing With Project (Scenario A)

The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

As there are no adverse effects at any of the study intersections with the addition of project-related traffic, no other improvements are needed or proposed.

Existing With Project (Scenario B)

The analysis results show all intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

As there are no adverse effects at any of the study intersections with the addition of project-related traffic, no other improvements are needed or proposed.

TABLE 9-1: INTERSECTION LOS SUMMARY TABLE

ID	Intersection	Control Type	Jurisdiction	Existing Year				Existing With Project (Scenario A)				Existing With Project (Scenario B)				Adverse Effect? (Scenario A)		Adverse Effect? (Scenario A)	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
				LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay				
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans	C	21.1	C	25.4	C	21.4	C	25.9	C	21.4	C	25.9	No	No	No	No
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans	C	31.6	C	30.4	C	32.2	C	30.7	C	32.1	C	30.6	No	No	No	No
3	Tennessee Street / Pennsylvania Avenue	OWSC	Redlands	*Intersection Does Not Exist Under This Condition*				B	12.3	B	13.9	B	12.7	B	14.5	No	No	No	No
4	Tennessee Street / W Lugonia Avenue	SIG	Redlands	C	23.4	**D**	**44.4**	C	30.3	**D**	**54.2**	C	29.6	**D**	**54.5**	No	No	No	No
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans	C	21.3	B	18.4	C	21.1	B	18.8	C	21.1	B	18.9	No	No	No	No
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans	C	28.0	D	46.9	C	28.7	D	53.1	C	28.7	D	53.1	No	No	No	No
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	Redlands	A	9.8	B	13.2	A	9.8	B	13.5	A	9.8	B	13.5	No	No	No	No
8	W Lugonia Avenue / Project Driveway	OWSC	Redlands	*Intersection Does Not Exist Under This Condition*				B	12.0	B	12.1	B	11.9	B	12.0	No	No	No	No
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	Redlands	B	11.2	B	14.4	B	10.8	B	13.7	B	10.8	B	13.6	No	No	No	No
10	W Lugonia Avenue / Karon Street	OWSC	Redlands	B	13.7	B	14.1	B	14.1	B	14.9	B	13.9	C	15.2	No	No	No	No
11	Pennsylvania Avenue / Karon Street	TWSC	Redlands	A	9.4	A	9.5	A	9.4	A	9.5	A	9.1	A	9.2	No	No	No	No
12	Pennsylvania Avenue / Texas Street	AWSC	Redlands	B	11.1	B	10.9	B	11.3	B	11.1	B	11.3	B	11.2	No	No	No	No
13	W Lugonia Avenue / Texas Street	SIG	Redlands	C	22.3	**F**	**138.2**	C	23.1	**F**	**138.2**	C	24.0	**F**	**138.0**	No	No	No	No

Notes:

1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.
2) Overall intersection LOS provided for signalized and AWSC intersections. Worst-approach LOS provided for TWSC and OWSC intersections.
3) City Intersections – LOS C or better is the preferred acceptable operation at City intersections. Bold text with yellow highlight indicates LOS D, E, or F.
4) Caltrans Intersections – LOS D or better is the preferred acceptable operation at Caltrans intersections. No intersections operate at LOS E or F.
5) Adverse effect determined if With Project scenario degrades operations below the Existing Conditions without Project level of service grade.
6) Delay shown in average seconds per vehicle.

Appendix A: Scoping Memorandum

November 2, 2022

City of Redlands
35 Cajon Street, Suite 15A
Redlands, CA 92373

Attn: Ryan Murphy
CC: Donald Young

Subject: Neighborhoods at Lugonia Village - Traffic Impact Study Scope of Work Update

Michael Baker International (Michael Baker) is preparing a Transportation Impact Study (TIS) report for the Neighborhoods at Lugonia Village project located in the northwest quadrant of the intersection of West Lugonia Avenue and Karon Street in the City of Redlands. The TIS is being prepared consistent with the City of Redlands *CEQA Assessment VMT Analysis Guidelines*, the County of San Bernardino *Transportation Impact Study Guidelines*, and the provisions of the City's Growth Management Initiative, Measure U. The TIS will analyze project-related traffic associated with the construction of 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units including an analysis of vehicle miles travelled (VMT) and level of service (LOS). The project is anticipated to generate approximately 3,581 daily trips with 219 AM peak hour trips and 277 PM peak hour trips.

The following scope of work provides additional information for the proposed project and outlines the proposed approach that Michael Baker plans to take in the preparation of the traffic study. A May 3, 2022, version of this document was previously approved; however, this document has been updated to address the following modifications:

1) **Decrease in Number of Units** – The number of single family homes in Neighborhood C were reduced from 20 homes to 19 homes.
2) **Site Driveway Change** – Modifications to the access at the W San Bernardino Avenue / Project Driveway Intersection (#8) were made since the original scoping agreement was prepared. The original site plan included a raised median on W. San Bernardino Avenue and an entry and exit driveway. The modified plan does not include the raised median along on W. San Bernardino and the driveway is exit only.
3) **Additional Scenario** – The traffic study will now include two (2) scenarios. Scenario A is consistent with the scenario shown in the previously approved scoping agreement where a connection between Pennsylvania Avenue and Karon Street would not be provided and a cul-de-sac would exist on Pennsylvania Avenue. Scenario B would include a connection between Pennsylvania Avenue and Karon Street. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods B and C would likely experience different local distribution patterns.

Please review this scoping agreement and let us know if you would like any adjustments to be made to the proposed analysis approach or the assumptions.

Sincerely,

Carla Dietrich, P.E. (PA), PTOE
Transportation Planner

1. Project Information

Project Location:	West Lugonia Ave / Karon St, Redlands, CA	
Project Description:	Multi-family residential (430 units), Townhomes (70 units), Single Family Residential (19 units)	
Project Opening Year:	2024	
Location:	North-west quadrant of West Lugonia Ave / Karon St (See **Exhibit 1**)	
	Engineer	**Applicant**
Company:	Michael Baker International	Redlands Summit, LLC.
Name:	Carla Dietrich	John Deacon (Applicant's Representative)
Address:	3536 Concours	202 South Lake Ave, Suite 300
City, State, Zip Code:	Ontario, CA 91764	Pasadena, CA 91101
Phone #:	(909) 974-4908	(818) 209-4564
Fax #:	N/A	N/A
Email:	cdietrich@mbakerintl.com	jdeacon@satusgroupllc.com

2. Trip Generation

Trip Credit:

No trip generation credits are being proposed for this project.

Trip Credit Type	Taken?	Explanation
Existing Active Land Use	No	Vacant Land
Previous Land Use	No	Undeveloped
Internal Trip Reduction	No	Not Applicable
Pass-by Trip Reduction	No	Not Applicable

Trip Generation:

See **Table 1** for the trip generation rates and **Table 2** for the project trip summary. The trip generation rates are taken from the ITE Trip Generation Manual, 11th Edition. The proposed project will construct 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units. As shown, the project is anticipated to generate approximately 3,581 daily trips with 219 AM peak hour trips and 277 PM peak hour trips.

Table 1 – Trip Generation Rates

Land Use	ITE Code	Neighborhood	Daily Trips Rate	AM Peak Hour			PM Peak Hour		
				Rate	In / Out		Rate	In / Out	
Single-Family Detached	210	Neighborhood C	9.43 / DU	0.70	26%	74%	0.94	63%	37%
Single-Family Attached	215	Neighborhood B	7.2 / DU	0.48	31%	69%	0.57	57%	43%
Multifamily (Low Rise)	220	Neighborhood A	6.74 / DU	0.40	24%	76%	0.51	63%	37%

Source: ITE Trip Generation Manual, 11th Edition

Table 2– Trip Generation

Land Use	ITE Code	Neighborhood	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
					Volume	In	Out	Volume	In	Out
Single-Family Detached	210	Neighborhood C	19 DU	179	13	3	10	18	11	7
Single-Family Attached	215	Neighborhood B	70 DU	504	34	11	23	40	23	17
Multifamily (Low Rise)	220	Neighborhood A	430 DU	2,898	172	41	131	219	138	81
Total			**519 DU**	**3,581**	**219**	**55**	**164**	**277**	**172**	**105**

Notes: 1) DU = Dwelling Unit

2) Values may vary slightly due to rounding

3. Analysis Scenarios

The study will analyze project-related traffic under two scenarios. Under Scenario A, the study will analyze the project assuming a cul-de-sac on Pennsylvania Avenue just west of the intersection of Pennsylvania Avenue and Karon Street. Under Scenario B, the study will analyze the project assuming Pennsylvania Avenue connects to Karon Street. **Exhibit 1** shows the proposed project site plan under Scenario A conditions. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods B and C would likely experience different local distribution patterns.

- Scenario A – Cul-de-sac Pennsylvania Avenue
- Scenario B – Pennsylvania Avenue Connection

In accordance with the Measure U Growth Management Initiative, the analysis scenarios are anticipated as follows:

1. Existing Conditions
2. Existing With Project Conditions (Scenario A)
3. Existing With Project Conditions (Scenario B)

4. Traffic Distribution

Exhibit 1 shows the proposed project site plan. The regional distribution trends are as follows:

- 10% to the North via I-210
- 30% to the West via I-10
- 10% to the East Via I-10
- 15% toward East Redlands
- 5% toward South Redlands
- 30% toward West Redlands

As shown in the site plan, the project is proposing 3 distinct neighborhoods, each with separate access. **Exhibits 2, 3,** and **4** show the **Scenario A** roadway segment trip distributions for each neighborhood. **Exhibits 5, 6,** and **7** show the **Scenario A** trip distribution by turning movement at the proposed study intersections under. The **Scenario A** trip assignment by turning movement for each neighborhood and the combined project are shown in **Exhibits 8, 9, 10, and 11**.

Exhibits 13, 14, and **15** show the **Scenario B** roadway segment trip distributions for each neighborhood. **Exhibits 16, 17,** and **18** show the **Scenario B** trip distribution by turning movement at the proposed study intersections under. The **Scenario B** trip assignment by turning movement for each neighborhood and the combined project are shown in **Exhibits 19, 20, 21, and 22**.

5. Study Area

The study shall include the following intersections:

1. W San Bernardino Avenue / I-210 Southbound Ramps
2. W San Bernardino Avenue / I-210 Northbound Ramps
3. Tennessee Street / Pennsylvania Avenue (Future)
4. Tennessee Street / W Lugonia Avenue
5. Tennessee Street / I-10 Westbound Ramps
6. Tennessee Street / I-10 Eastbound Ramps
7. W San Bernardino Avenue / Citrus Plaza Drive
8. W San Bernardino Avenue / Project Driveway
9. W Lugonia Avenue / New York Street
10. W Lugonia Avenue / Karon Street
11. Pennsylvania Avenue / Karon Street
12. Pennsylvania Avenue / Texas Street
13. W Lugonia Avenue / Texas Street

Exhibit 12 (Scenario A) and **Exhibit 23** (Scenario B) show the anticipated segment trips generated by the project beyond of the proposed study intersections and **Table 4** lists the entering trips at each study intersection. In most locations, more than 50 project trips are not anticipated to enter intersections beyond those included in the study area. Other locations with close to 50 project trips or intersections of potential concern are also included as study intersections.

While the intersections of Pennsylvania Avenue & Karon Street (#11), Pennsylvania Avenue & Texas Street (#12), and W Lugonia Avenue & Texas Street (#13) are anticipated to experience fewer than 50 entering intersection trips, these intersections were added to the list of study intersections given their proximity to the project area via a new connecting roadway.

Approximately 54 vehicles are anticipated to travel along the segment of W Lugonia Avenue to the west of the intersection of W Lugonia Avenue & Citrus Plaza Drive (#7) during PM peak hour. Due to the large proportion of retail and commercial uses to the north and south of this segment, it is expected that a portion of trips will distribute out to the local businesses. As such, it is anticipated that less than 50 vehicle trips will enter the intersection of W Lugonia Avenue & Alabama Street during the PM peak hour.

Table 4: Anticipated Project Trips Entering Intersection

Intersection		Project Trips Entering Intersection			
		Scenario A		Scenario B	
		AM	PM	AM	PM
1	W San Bernardino Avenue / I-210 Southbound Ramps	26	45	27	46
2	W San Bernardino Avenue / I-210 Northbound Ramps	27	34	27	34
3	Tennessee Street / Pennsylvania Avenue (Future)	51	62	50	61
4	Tennessee Street / W Lugonia Avenue	170	216	166	210
5	Tennessee Street / I-10 Westbound Ramps	89	112	90	113
6	Tennessee Street / I-10 Eastbound Ramps	34	64	35	64
7	W Lugonia Avenue / Citrus Plaza Drive	61	78	59	75
8	W San Bernardino Avenue / Project Driveway	155	194	150	187
9	W Lugonia Avenue / New York Street	132	204	127	197
10	W Lugonia Avenue / Karon Street	39	52	34	45
11	Pennsylvania Avenue / Karon Street	3	3	10	12
12	Pennsylvania Avenue / Texas Street	12	14	15	18
13	W Lugonia Avenue / Texas Street	30	39	30	39

6. Study Guidelines & Methodologies

1. The following guidelines will be utilized:
    a. City of Redlands CEQA Assessment VMT Analysis Guidelines (June 2020)
    b. City of Redlands Measure U Growth Management Initiative
    c. San Bernardino County Transportation Impact Study Guidelines (July 2019)

2. The Highway Capacity Manual (6th Edition) and Synchro Software (Version 10) will be used

Measure U is a local growth management initiative and contains several guiding policies for traffic Levels of Service within the City of Redlands. The TIA will include detailed discussion regarding Measure U and will adhere to its guiding policies.

7. Traffic Counts

New traffic counts will be obtained at all the study intersections and will adhere to the following guidelines:

- Must be taken on a Tuesday, Wednesday, or Thursday
- Must exclude holidays
- Must be taken when local schools are in session
- Must be taken on days of good weather, and avoid atypical conditions (e.g. road construction, detours, or major traffic incidents)
- Count time periods
    - 7:00 AM – 9:00 AM
    - 4:00 PM – 6:00 PM

Given easing pandemic conditions and restrictions at both the state and county levels, a COVID adjustment factor will not be applied to collected traffic counts.

8. Vehicle Miles Travelled (VMT) Analysis

Based on the *City of Redlands CEQA Assessment VMT Analysis Guidelines* (June 2020) (*City Guidelines*) land use projects that meet any of the screening thresholds based on size, location, proximity to transit or trip-making potential identified in **Table 5** are presumed to result in a less-than-significant transportation impact under CEQA and do not require a detailed quantitative VMT assessment.

A previous submittal of this Scope of Work, dated April 15, 2022, used an outdated SBCTA VMT screening tool in determining whether the project was located in a Low VMT area. That screening tool indicated a project-specific VMT assessment would be required. Using the appropriate SBCTA screening tool linked within the City Guidelines, the project is located in a Low VMT area. The results in **Table 5** *Step 2: Low VMT Area* have been revised accordingly. **The Project meets the Screening Criteria allowing for a determination of a less-than-significant impact on VMT. Therefore, a detailed project-specific VMT analysis is NOT required**. The information contained in this section of the scoping letter along with additional supporting information, including screen captures of the screening tool results, will be formally documented in a separte VMT screening memorandum.

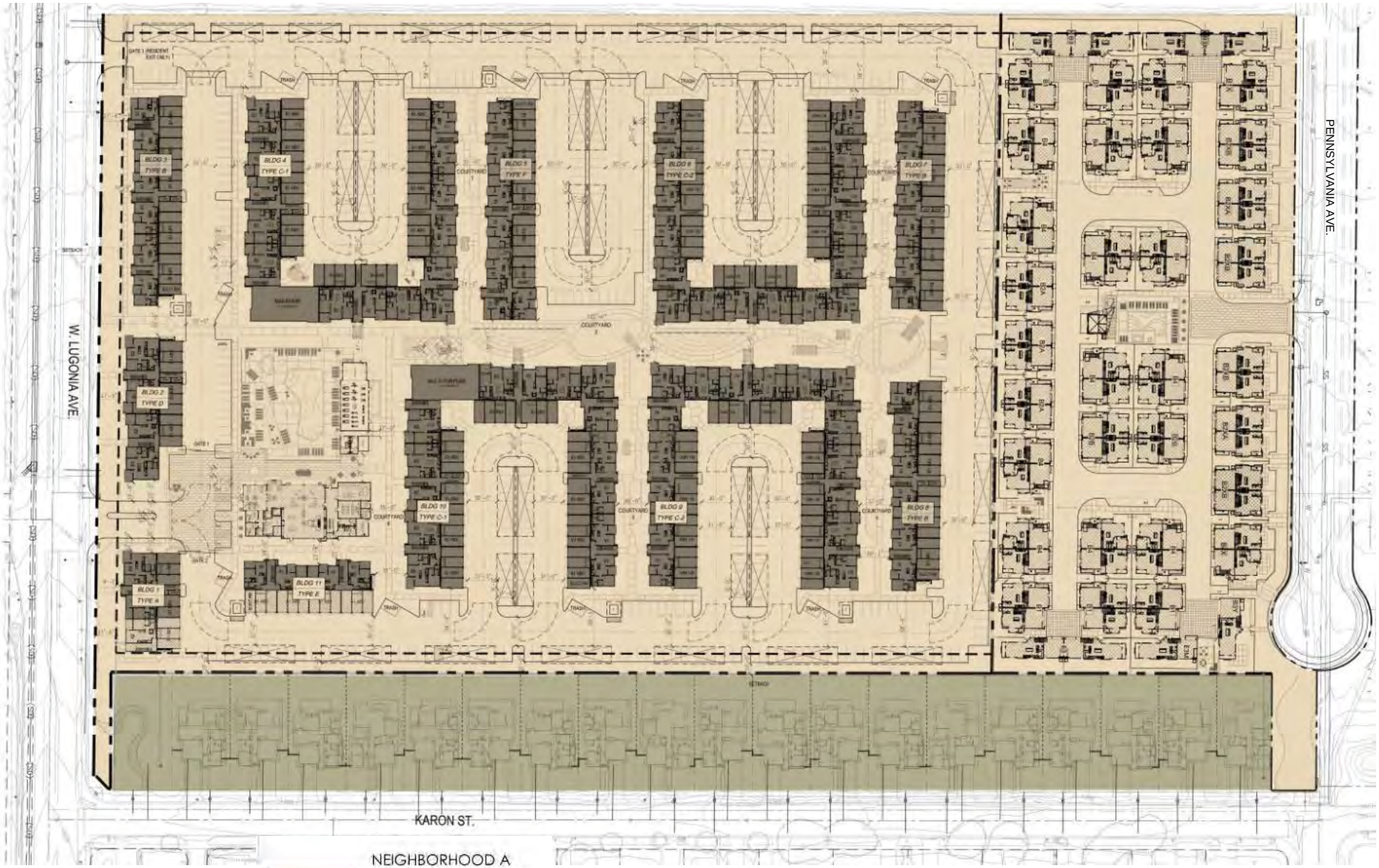
Table 5: Screening Assessment Summary

Category (City Guidelines)	Description	Project Assessment	Result
Step 1: Transit Priority Area (TPA)	Is the project located within a half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor?	No. The project is located within a half mile of OmniTrans Route 15 transit stops. Route 15 has service intervals of 60 minutes, and thus does not meet the criteria of a 15-minute service interval for a "high-quality transit corridor."	Does Not Meet Criteria
Step 2: Low VMT Area	Is the project located in a low VMT generating area (less 15% below the San Bernardino County regional average VMT per service population)	Yes. Using the SBCTA VMT screening tool referenced in the City Guidelines, the project is in a Low VMT Area.	**Meets Criteria**
Step 3: Project Type	Is the project a local servicing retail project with less than 50,000 square feet, or a locally serving use including (but not limited to) the following? • Public/Community Use (school/library/park/fire station/ local government) • Day Care • Locally serving Bank • Assisted living/senior housing **Or**, Does the project generate less than 3,000 MT CO2e per year? Including projects such as: • Single Family Res. – 167 DU's or fewer • Multifamily Res. (1-2 stories) – 232 DU's or fewer • Multifamily Res. (3+ stories) – 299 DU's or fewer • Office – 59,100 square feet or less • Local Serving Retail Center – 112,400 SF or less • Warehousing – 463,600 SF or less • Light Industrial – 74,600 SF or less	No. The project proposes the construction of 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units	Does Not Meet Criteria

Source: Category and Description obtained from the *City of Redlands CEQA Assessment VMT Analysis Guidelines* (June 2020)

Michael Baker
INTERNATIONAL

EXHIBITS



Not to Scale

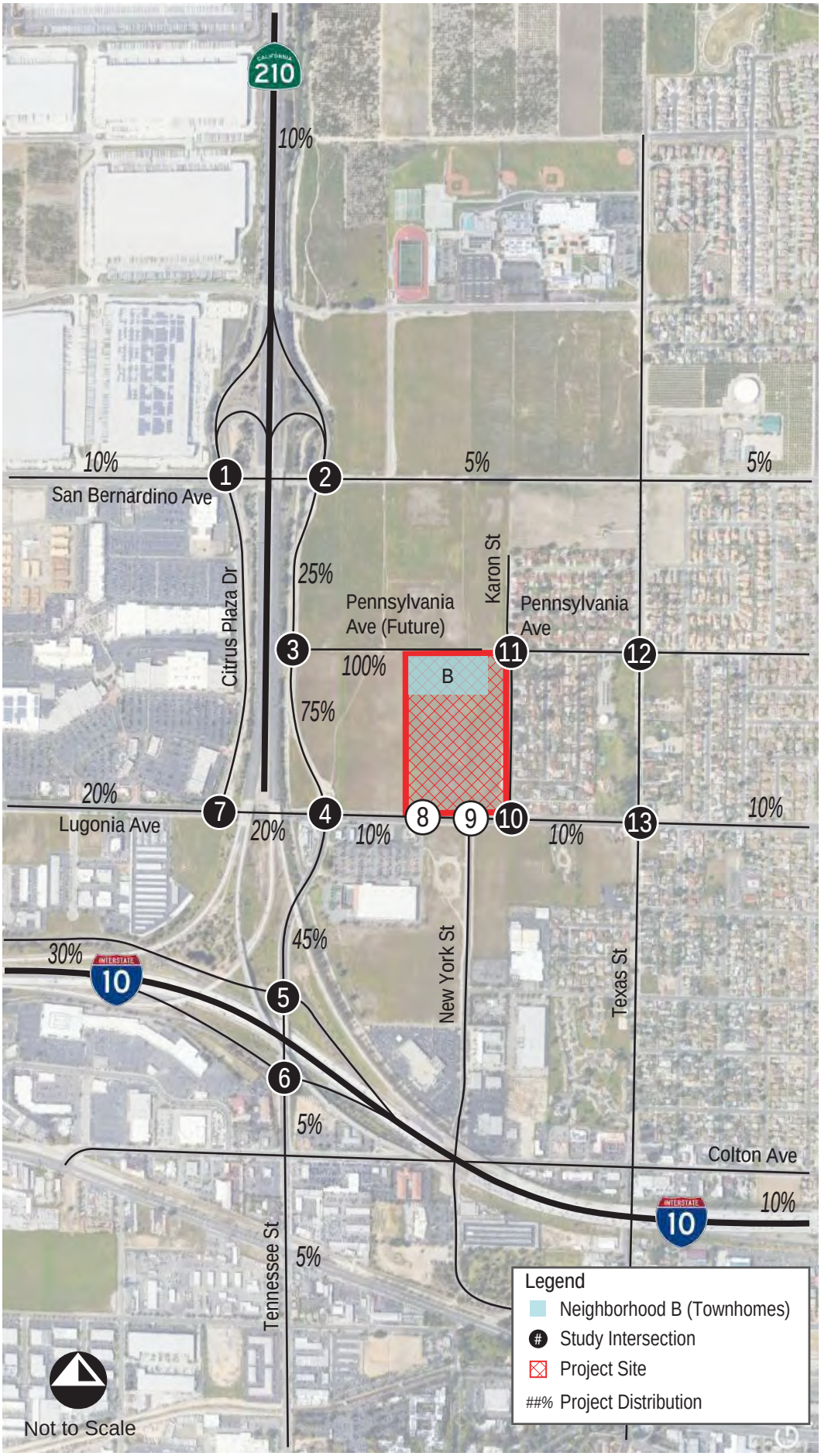
Michael Baker INTERNATIONAL

Proposed Site Plan



Scenario A: Project Trip Distribution (Neighborhood A)

Note: Scenario A = Without Pennsylvania Ave Connection



Scenario A: Project Trip Distribution (Neighborhood B)

Note: Scenario A = Without Pennsylvania Ave Connection



Scenario A: Project Trip Distribution (Neighborhood C)

Note: Scenario A = Without Pennsylvania Ave Connection



Scenario A:
Intersection Project Trip Distribution (Neighborhood A)

Note: Scenario A = Without Pennsylvania Ave Connection



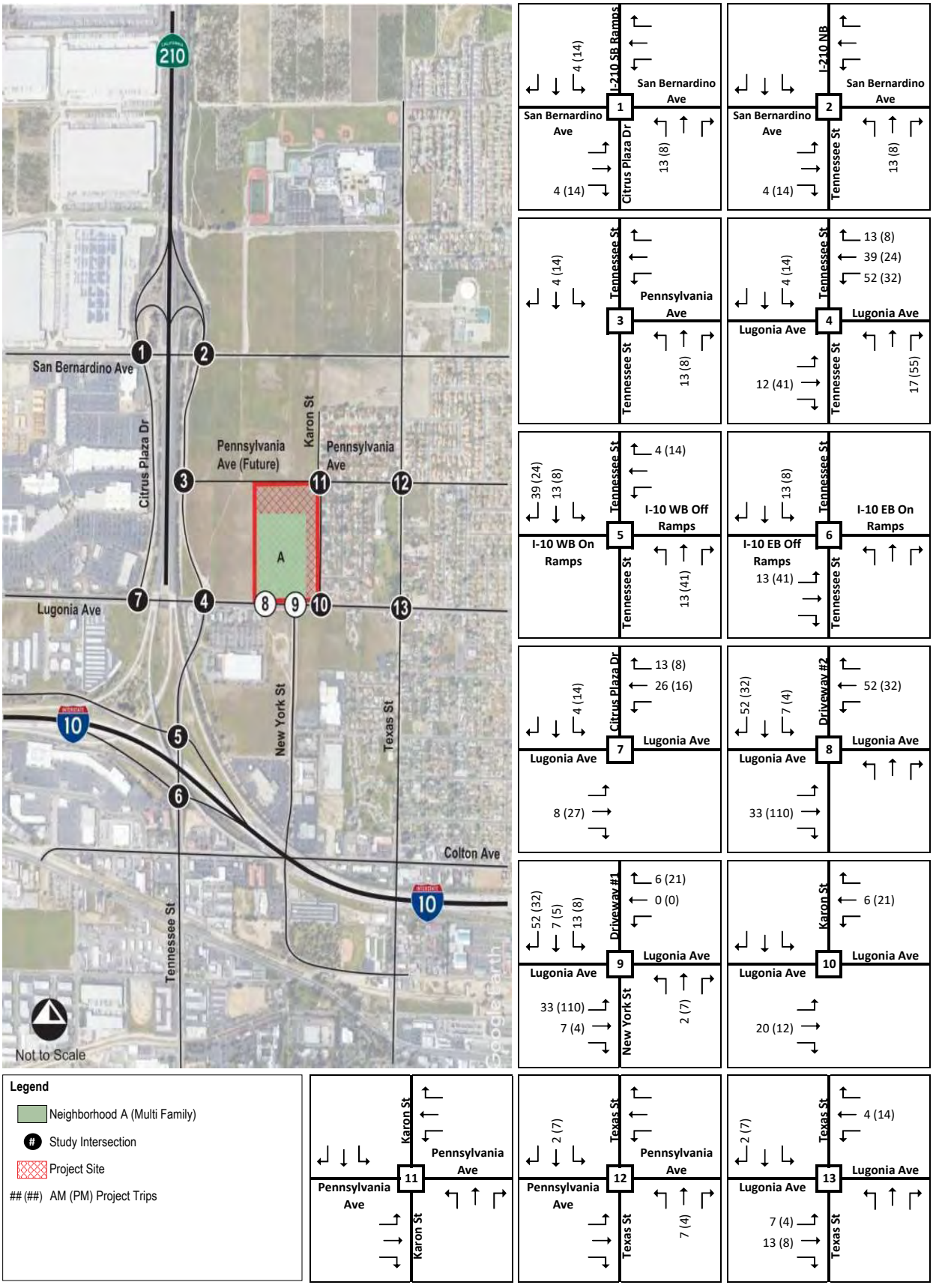
Scenario A:
Intersection Project Trip Distribution (Neighborhood B)

Note: Scenario A = Without Pennsylvania Ave Connection



Scenario A:
Intersection Project Trip Distribution (Neighborhood C)

Note: Scenario A = Without Pennsylvania Ave Connection



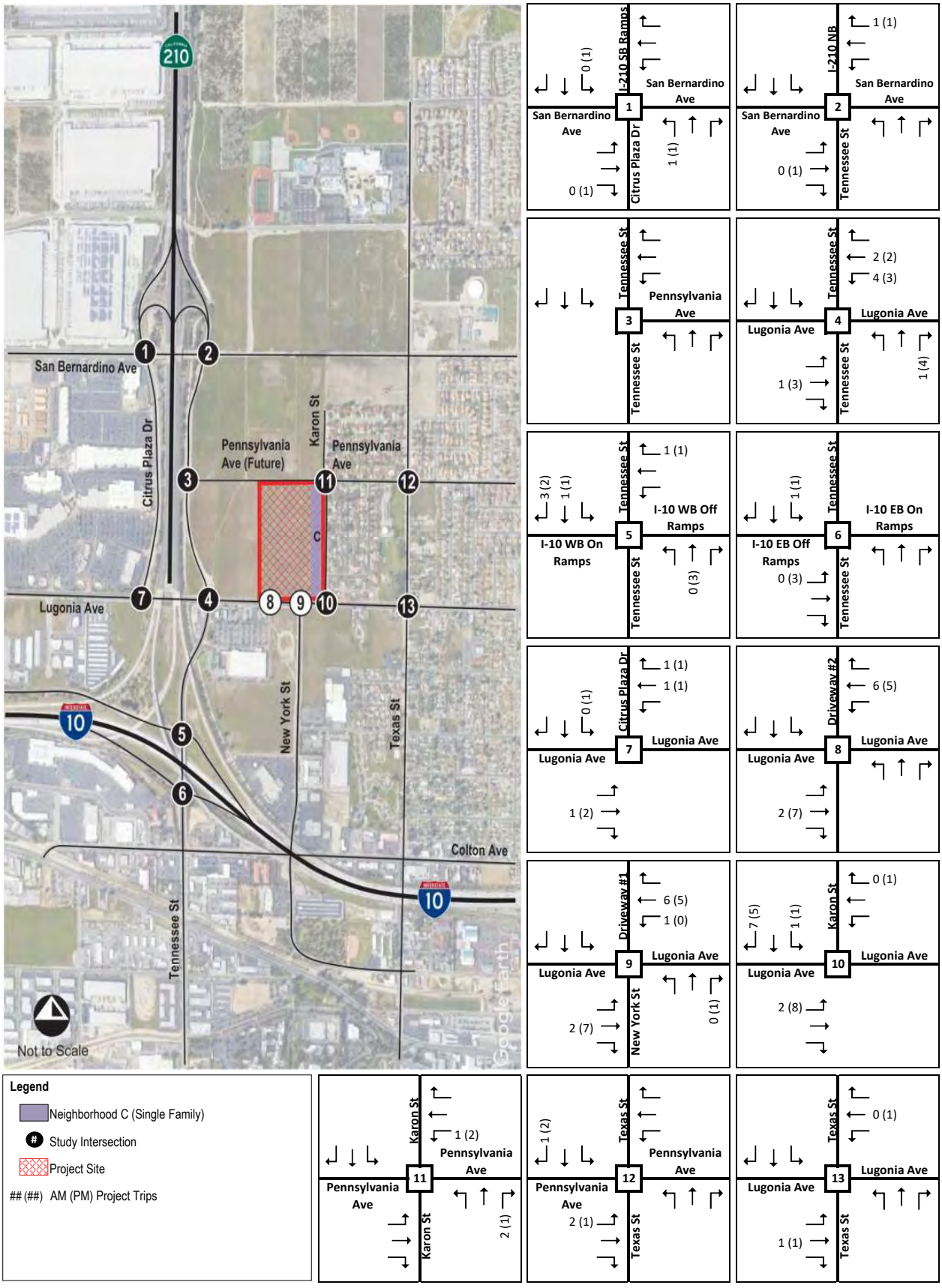
Scenario A:
Intersection Project Trips (Neighborhood A)

Note: Scenario A = Without Pennsylvania Ave Connection



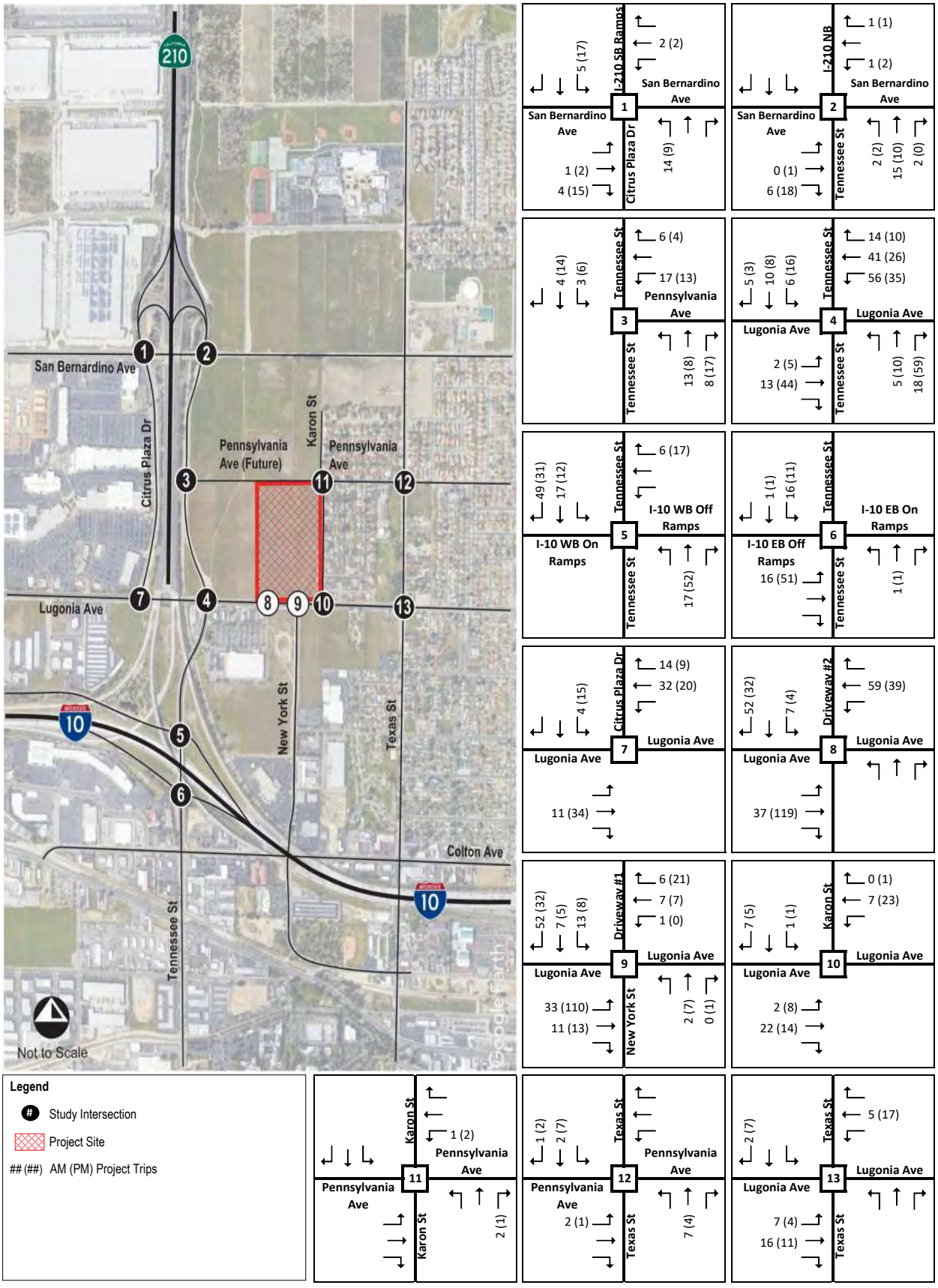
Scenario A: Intersection Project Trips (Neighborhood B)

Note: Scenario A = Without Pennsylvania Ave Connection



Scenario A: Intersection Project Trips (Neighborhood C)

Note: Scenario A = Without Pennsylvania Ave Connection



Scenario A: Intersection Project Trip

Note: Scenario A = Without Pennsylvania Ave Connection



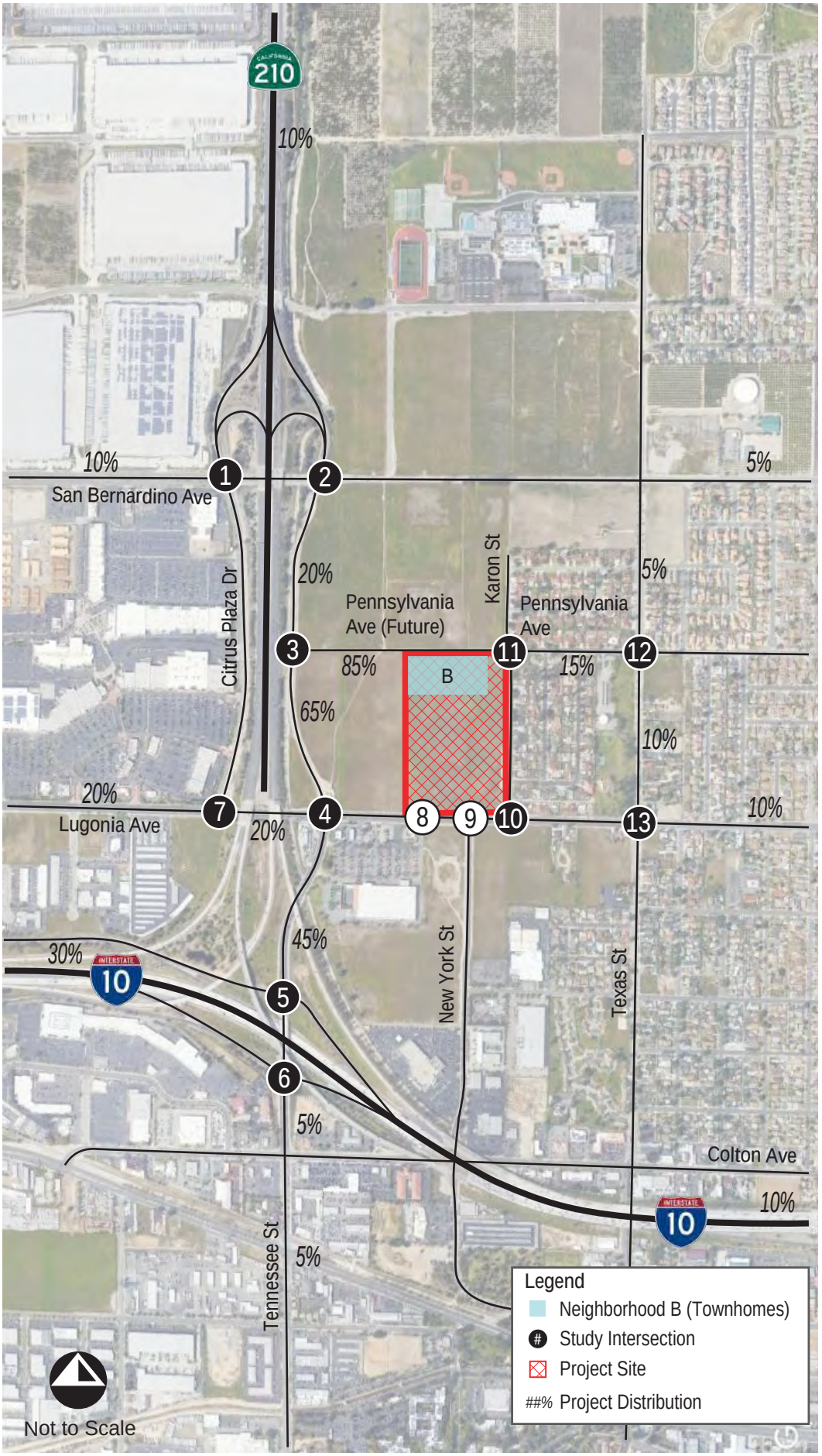
Scenario A: Segment Project Trips (Total)

Note: Scenario A = Without Pennsylvania Ave Connection



Scenario B: Project Trip Distribution (Neighborhood A)

Note: Scenario B = With Pennsylvania Ave Connection



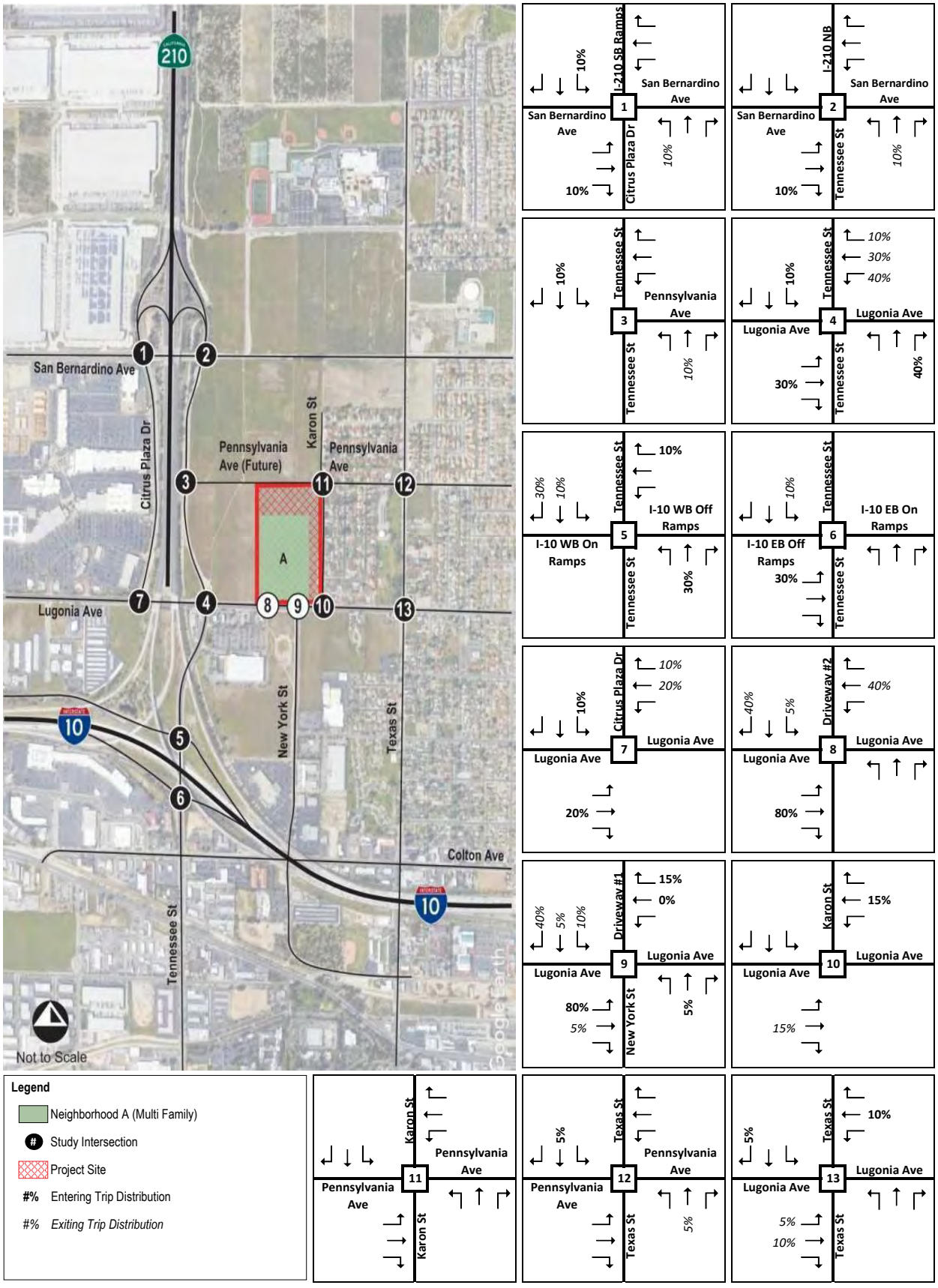
Scenario B: Project Trip Distribution (Neighborhood B)

Note: Scenario B = With Pennsylvania Ave Connection



Scenario B: Project Trip Distribution (Neighborhood C)

Note: Scenario B = With Pennsylvania Ave Connection



Scenario B: Intersection Project Trip Distribution (Neighborhood A)

Note: Scenario B = With Pennsylvania Ave Connection



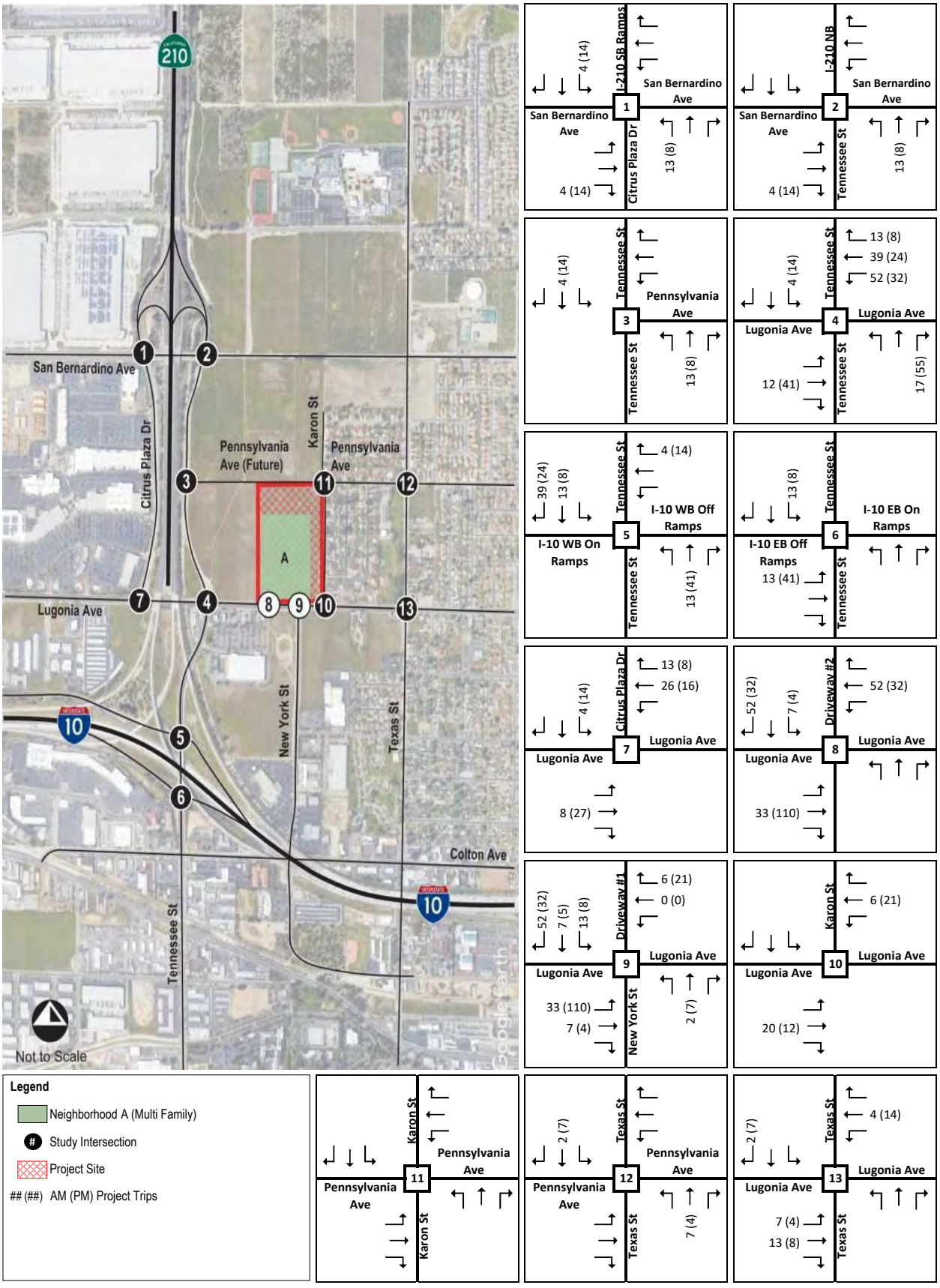
Scenario B: Intersection Project Trip Distribution (Neighborhood B)

Note: Scenario B = With Pennsylvania Ave Connection



Scenario B: Intersection Project Trip Distribution (Neighborhood C)

Note: Scenario B = With Pennsylvania Ave Connection



Scenario B: Intersection Project Trips (Neighborhood A)

Note: Scenario B = With Pennsylvania Ave Connection



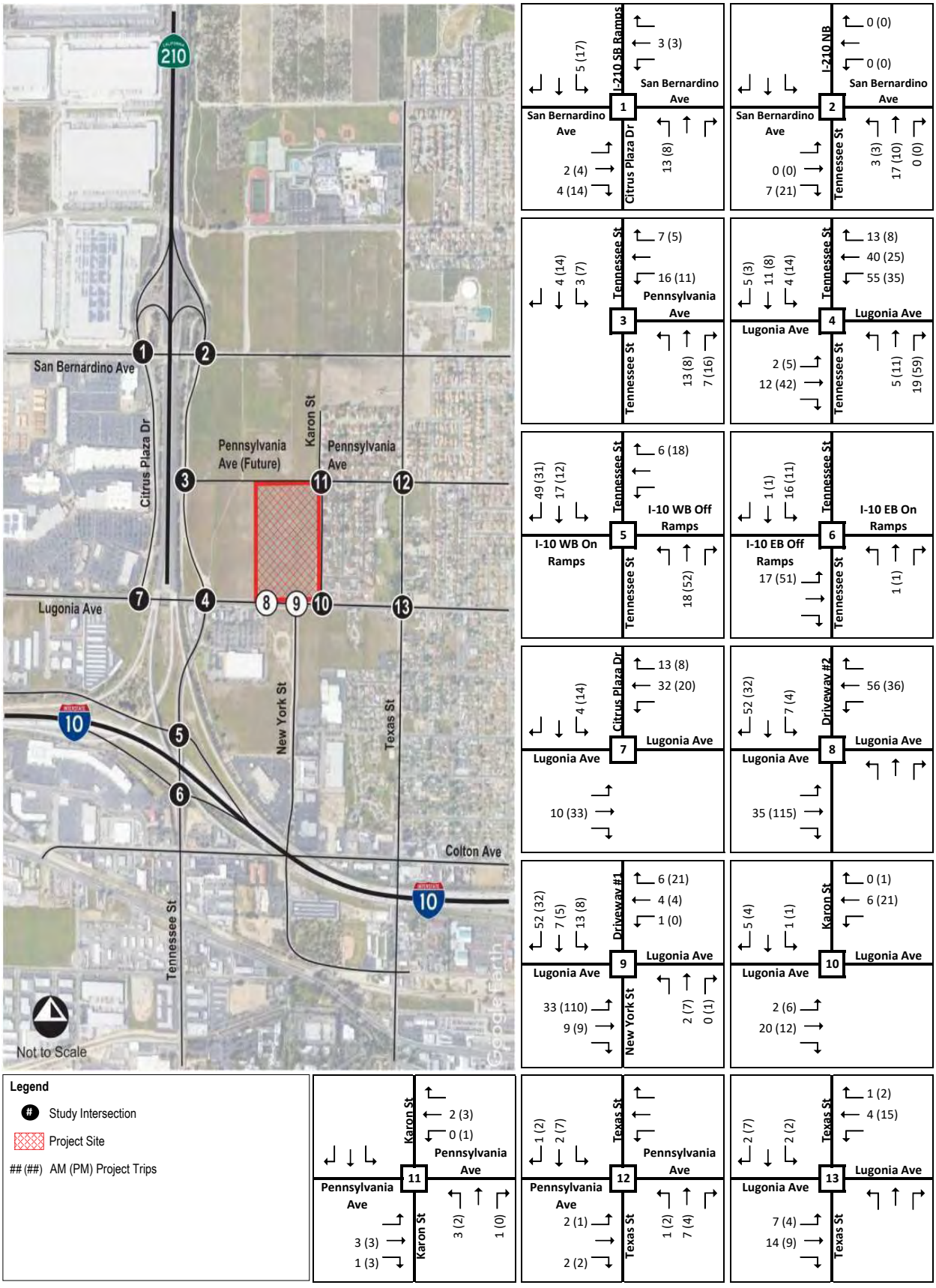
Scenario B: Intersection Project Trips (Neighborhood B)

Note: Scenario B = With Pennsylvania Ave Connection



Scenario B: Intersection Project Trips (Neighborhood C)

Note: Scenario B = With Pennsylvania Ave Connection



Scenario B: Intersection Project Trip

Note: Scenario B = With Pennsylvania Ave Connection



Scenario B: Segment Project Trips (Total)

Note: Scenario B = With Pennsylvania Ave Connection

Appendix B:
Volume Development Worksheets

Redlands Neighborhoods at Lugonia Village
Volume Development

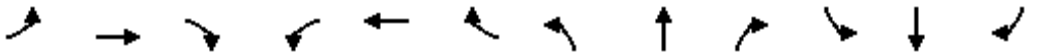
Intersection/Movement		Counts		Balance		Existing		Project Only (Scenario A Cul-de-sac)		Existing With Project (Scenario A)		Project Only (Scenario B Penn Connection)		Existing With Project (Scenario B)		Existing (Scenario B Changes)		Existing With Project (Scenario B) Final	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1) W San Bernardino Avenue / I-210 Southbound Ramps	NBL	15	40			15	40	14	9	29	49	13	8	28	48			28	48
	NBT	4	61			4	61	0	0	4	61	0	0	4	61			4	61
	NBR	35	268		1	35	269	0	0	35	269	0	0	35	269			35	269
	SBL	193	143	-3	1	190	144	5	17	195	161	5	17	195	161			195	161
	SBT	175	256			175	256	0	0	175	256	0	0	175	256			175	256
	SBR	150	125			150	125	0	0	150	125	0	0	150	125			150	125
	EBL	59	102			59	102	0	0	59	102	0	0	59	102			59	102
	EBT	276	578	-4	2	272	580	1	2	273	582	2	4	274	584			274	584
	EBR	40	70			40	70	4	15	44	85	4	14	44	84			44	84
	WBL	65	124		1	65	125	0	0	65	125	0	0	65	125			65	125
	WBT	310	229	2	1	312	230	2	2	314	232	3	3	315	233			315	233
	WBR	242	128	2	1	244	129	0	0	244	129	0	0	244	129			244	129
2) W San Bernardino Avenue / I-210 Northbound Ramps	NBL	32	55		-1	32	54	2	2	34	56	3	3	35	57			35	57
	NBT	263	376	-1	-2	262	374	15	10	277	384	17	10	279	384			279	384
	NBR	49	37			49	37	2	0	51	37	0	0	49	37			49	37
	SBL	126	184			126	184	0	0	126	184	0	0	126	184			126	184
	SBT	17	12			17	12	0	0	17	12	0	0	17	12			17	12
	SBR	84	110	-1		83	110	0	0	83	110	0	0	83	110			83	110
	EBL	110	395	2	-2	112	393	0	0	112	393	0	0	112	393			112	393
	EBT	283	485	5	-4	288	481	0	1	288	482	0	0	288	481			288	481
	EBR	96	116	1	3	97	119	6	18	103	137	7	21	104	140			104	140
	WBL	46	22		1	46	23	1	2	47	25	0	0	46	23			46	23
	WBT	508	322	-2	-2	506	320	0	0	506	320	0	0	506	320			506	320
	WBR	273	159			273	159	1	1	274	160	0	0	273	159			273	159
3) Tennessee Street / Pennsylvania Avenue (Future)	NBL					0	0	0	0	0	0	0	0	0	0			0	0
	NBT					343	465	13	8	356	473	13	8	356	473			356	473
	NBR					0	0	8	17	8	17	7	16	7	16	9	21	16	37
	SBL					0	0	3	6	3	6	3	7	3	7			3	7
	SBT					160	154	4	14	164	168	4	14	164	168			164	168
	SBR					0	0	0	0	0	0	0	0	0	0			0	0
	EBL					0	0	0	0	0	0	0	0	0	0			0	0
	EBT					0	0	0	0	0	0	0	0	0	0			0	0
	EBR					0	0	0	0	0	0	0	0	0	0			0	0
	WBL					0	0	17	13	17	13	16	11	16	11	11	11	27	22
	WBT					0	0	0	0	0	0	0	0	0	0			0	0
	WBR					0	0	6	4	6	4	7	5	7	5			7	5
4) Tennessee Street / W Lugonia Avenue	NBL	161	301			161	301	0	0	161	301	0	0	161	301			161	301
	NBT	224	297	1	2	225	299	5	10	230	309	5	11	230	310	3	4	233	314
	NBR	98	206			98	206	18	59	116	265	19	59	117	265	-3	-4	114	261
	SBL	54	75		-2	54	73	6	16	60	89	4	14	58	87			58	87
	SBT	102	77		-2	102	75	10	8	112	83	11	8	113	83	3	2	116	85
	SBR	4	6			4	6	5	3	9	9	5	3	9	9	8	9	17	18
	EBL	29	59			29	59	2	5	31	64	2	5	31	64	6	17	37	81
	EBT	173	740			173	740	13	44	186	784	12	42	185	782	-6	-17	179	765
	EBR	125	404			125	404	0	0	125	404	0	0	125	404			125	404
	WBL	125	116			125	116	56	35	181	151	55	35	180	151	-3	-2	177	149
	WBT	361	426			361	426	41	26	402	452	40	25	401	451	-8	-9	393	442
	WBR	88	106	1	1	89	107	14	10	103	117	13	8	102	115			102	115
5) Tennessee Street / I-10 Westbound Ramps	NBL	209	223			209	223	0	0	209	223	0	0	209	223			209	223
	NBT	425	681	2	-1	427	680	17	52	444	732	18	52	445	732			445	732
	NBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBT	316	516	-1	2	315	518	17	12	332	530	17	12	332	530			332	530
	SBR	108	105			108	105	49	31	157	136	49	31	157	136			157	136
	EBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	EBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	EBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBL	218	118	-1	1	217	119	0	0	217	119	0	0	217	119			217	119
	WBT	5	3			5	3	0	0	5	3	0	0	5	3			5	3
	WBR	161	214			161	214	6	17	167	231	6	18	167	232			167	232
6) Tennessee Street / I-10 Eastbound Ramps	NBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	NBT	510	619	-1	1	509	620	1	1	510	621	1	1	510	621			510	621
	NBR	112	149			112	149	0	0	112	149	0	0	112	149			112	149
	SBL	107	229	1	-1	108	228	16	11	124	239	16	11	124	239			124	239
	SBT	422	410	2	-1	424	409	1	1	425	410	1	1	425	410			425	410
	SBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	EBL	127	283			127	283	16	51	143	334	17	51	144	334			144	334
	EBT	144	348			144	348	0	0	144	348	0	0	144	348			144	348
	EBR	321	354			321	354	0	0	321	354	0	0	321	354			321	354
	WBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
7) W Lugonia Avenue / Citrus Plaza Drive	NBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	NBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	NBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBL	141	491	1	-2	142	489	4	15	146	504	4	14	146	503			146	503
	SBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBR	64	129			64	129	0	0	64	129	0	0	64	129			64	129
	EBL	14	62			14	62	0	0	14	62	0	0	14	62			14	62
	EBT	184	718	1	-4	185	714	11	34	196	748	10	33	195	747			195	747
	EBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBT	440	450	2	-6	442	444	32	20	474	464	32	20	474	464			474	464
	WBR	84	293		-4	84	289	14	9	98	298	13	8	97	297			97	297

Redlands Neighborhoods at Lugonia Village
Volume Development

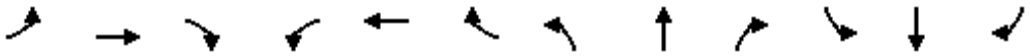
Intersection/Movement		Counts		Balance		Existing		Project Only (Scenario A Cul-de-sac)		Existing With Project (Scenario A)		Project Only (Scenario B Penn Connection)		Existing With Project (Scenario B)		Existing (Scenario B Changes)		Existing With Project (Scenario B) Final	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
8) W Lugonia Avenue / Project Driveway	NBL					0	0	0	0	0	0	0	0	0	0			0	0
	NBT					0	0	0	0	0	0	0	0	0	0			0	0
	NBR					0	0	0	0	0	0	0	0	0	0			0	0
	SBL					0	0	7	4	7	4	7	4	7	4			7	4
	SBT					0	0	0	0	0	0	0	0	0	0			0	0
	SBR					0	0	52	32	52	32	52	32	52	32			52	32
	EBL					0	0	0	0	0	0	0	0	0	0			0	0
	EBT					382	1114	37	119	419	1233	35	115	417	1229	-9	-21	408	1208
	EBR					0	0	0	0	0	0	0	0	0	0			0	0
	WBL					0	0	0	0	0	0	0	0	0	0			0	0
	WBT					619	672	59	39	678	711	56	36	675	708	-11	-11	664	697
	WBR					0	0	0	0	0	0	0	0	0	0			0	0
9) W Lugonia Avenue / New York Street	NBL	88	169			88	169	0	0	88	169	0	0	88	169			88	169
	NBT	0	0			0	0	2	7	2	7	2	7	2	7			2	7
	NBR	26	57			26	57	0	1	26	58	0	1	26	58			26	58
	SBL	0	0			0	0	13	8	13	8	13	8	13	8			13	8
	SBT	0	0			0	0	7	5	7	5	7	5	7	5			7	5
	SBR	0	0			0	0	52	32	52	32	52	32	52	32			52	32
	EBL	0	0			0	0	33	110	33	110	33	110	33	110			33	110
	EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940
	EBR	84	162			84	162	0	0	84	162	0	0	84	162			84	162
	WBL	39	40			39	40	1	0	40	40	1	0	40	40			40	40
	WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496
	WBR	0	0			0	0	6	21	6	21	6	21	6	21			6	21
10) W Lugonia Avenue / Karon Street	NBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	NBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	NBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBL	5	3			5	3	1	1	6	4	1	1	6	4			6	4
	SBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBR	36	26			36	26	7	5	43	31	5	4	41	30	-11	-11	30	19
	EBL	26	82			26	82	2	8	28	90	2	6	28	88	-9	-21	19	67
	EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939
	EBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538
	WBR	3	8			3	8	0	1	3	9	0	1	3	9			3	9
11) Pennsylvania Avenue / Karon Street	NBL	0	0			0	0	0	0	0	0	3	2	3	2			3	2
	NBT	6	14			6	14	0	0	6	14	0	0	6	14			6	14
	NBR	23	52			23	52	2	1	25	53	1	0	24	52	-9	-21	15	31
	SBL	0	2			0	2	0	0	0	2	0	0	0	2			0	2
	SBT	6	7			6	7	0	0	6	7	0	0	6	7	-2	-3	4	4
	SBR	0	0			0	0	0	0	0	0	0	0	0	0	2	3	2	3
	EBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	EBT	0	0			0	0	0	0	0	0	3	3	3	3	9	21	12	24
	EBR	0	0			0	0	0	0	0	0	1	3	1	3			1	3
	WBL	22	21			22	21	1	2	23	23	0	1	22	22	-9	-8	13	14
	WBT	0	0			0	0	0	0	0	0	2	3	2	3	9	8	11	11
	WBR	3	2			3	2	0	0	3	2	0	0	3	2			3	2
12) Pennsylvania Avenue / Texas Street	NBL	5	7			5	7	0	0	5	7	1	2	6	9			6	9
	NBT	182	265			182	265	7	4	189	269	7	4	189	269			189	269
	NBR	44	89			44	89	0	0	44	89	0	0	44	89			44	89
	SBL	42	26			42	26	0	0	42	26	0	0	42	26			42	26
	SBT	252	183			252	183	2	7	254	190	2	7	254	190			254	190
	SBR	6	16			6	16	1	2	7	18	1	2	7	18			7	18
	EBL	25	16			25	16	2	1	27	17	2	1	27	17			27	17
	EBT	10	39			10	39	0	0	10	39	0	0	10	39			10	39
	EBR	15	11			15	11	0	0	15	11	2	2	17	13			17	13
	WBL	131	68			131	68	0	0	131	68	0	0	131	68			131	68
	WBT	25	16			25	16	0	0	25	16	0	0	25	16			25	16
	WBR	49	24			49	24	0	0	49	24	0	0	49	24			49	24
13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105
	NBT	174	259			174	259	0	0	174	259	0	0	174	259			174	259
	NBR	94	143			94	143	0	0	94	143	0	0	94	143			94	143
	SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20
	SBT	295	222			295	222	0	0	295	222	0	0	295	222			295	222
	SBR	72	33			72	33	2	7	74	40	2	7	74	40			74	40
	EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72
	EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778
	EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93
	WBL	191	86			191	86	0	0	191	86	0	0	191	86			191	86
	WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400
	WBR	25	12			25	12	0	0	25	12	1	2	26	14			26	14

Note: Existing With Project (Scenario B) Final assumed a 40% redistribution of Existing project trips due to new connection at #11

Appendix C:
Existing Year 2022 AM Peak Hour Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	272	40	65	312	244	15	4	35	190	175	150
Future Volume (vph)	59	272	40	65	312	244	15	4	35	190	175	150
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			257			113		167	
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		1161			720			1341			1495	
Travel Time (s)		26.4			16.4			26.1			34.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	7%	6%	2%	7%	3%	3%	17%	3%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	302	44	72	347	271	17	4	39	211	194	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	302	44	72	347	271	17	4	39	211	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												



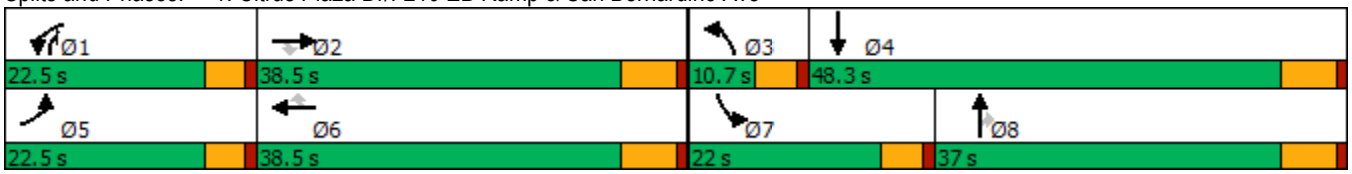
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.5	38.5	22.5	38.5	38.5	10.7	37.0	22.5	22.0	48.3	
Total Split (%)	18.8%	32.1%	32.1%	18.8%	32.1%	32.1%	8.9%	30.8%	18.8%	18.3%	40.3%	
Maximum Green (s)	17.8	32.5	32.5	17.8	32.5	32.5	6.0	31.0	17.8	17.3	42.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	8.9	20.0	20.0	9.1	20.2	20.2	6.4	6.4	10.8	16.8	15.6	
Actuated g/C Ratio	0.15	0.33	0.33	0.15	0.33	0.33	0.11	0.11	0.18	0.28	0.26	
v/c Ratio	0.29	0.29	0.08	0.30	0.62	0.41	0.10	0.02	0.11	0.48	0.39	
Control Delay	32.5	17.5	0.2	32.3	24.5	5.3	35.1	34.2	0.6	28.8	14.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.5	17.5	0.2	32.3	24.5	5.3	35.1	34.2	0.6	28.8	14.2	
LOS	C	B	A	C	C	A	D	C	A	C	B	
Approach Delay		18.0			17.8			12.6			19.6	
Approach LOS		B			B			B			B	
90th %ile Green (s)	12.3	32.1	32.1	12.7	32.5	32.5	6.0	6.5	12.7	17.3	17.8	
90th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Max	Gap	Gap	Max	Hold	
70th %ile Green (s)	10.0	24.8	24.8	10.3	25.1	25.1	0.0	0.0	10.3	17.3	16.0	
70th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Max	Hold	
50th %ile Green (s)	8.4	18.5	18.5	8.6	18.7	18.7	0.0	0.0	8.6	17.3	16.0	
50th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Max	Hold	
30th %ile Green (s)	7.2	15.9	15.9	7.4	16.1	16.1	0.0	0.0	7.4	15.6	14.3	
30th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Gap	Hold	
10th %ile Green (s)	0.0	10.4	10.4	0.0	10.4	10.4	0.0	0.0	0.0	11.6	10.3	
10th %ile Term Code	Skip	Hold	Hold	Skip	Gap	Gap	Skip	Skip	Skip	Gap	Hold	
Stops (vph)	51	178	0	56	237	31	16	7	0	146	136	
Fuel Used(gal)	1	4	0	1	5	2	1	0	1	4	5	
CO Emissions (g/hr)	84	309	25	77	323	126	36	11	47	289	383	
NOx Emissions (g/hr)	16	60	5	15	63	25	7	2	9	56	75	
VOC Emissions (g/hr)	20	71	6	18	75	29	8	3	11	67	89	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	22	43	0	24	107	3	6	1	0	62	28	
Queue Length 95th (ft)	74	95	0	78	245	56	30	13	0	#208	92	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	506	1902	921	516	1001	987	172	873	598	501	2263	

Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.16	0.05	0.14	0.35	0.27	0.10	0.00	0.07	0.42	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 60.9			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 18.3		Intersection LOS: B	
Intersection Capacity Utilization 53.8%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 67.8			
50th %ile Actuated Cycle: 59.8			
30th %ile Actuated Cycle: 54.3			
10th %ile Actuated Cycle: 32.7			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave



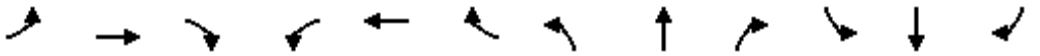
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	272	40	65	312	244	15	4	35	190	175	150
Future Volume (veh/h)	59	272	40	65	312	244	15	4	35	190	175	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1647	1702	1716	1673	1702	1758	1660	1561	1758	1673	1772	1744
Adj Flow Rate, veh/h	66	302	44	72	347	271	17	4	39	211	194	167
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	7	6	2	7	3	3	17	3	2	2	4
Cap, veh/h	139	888	399	141	467	409	33	138	263	272	419	341
Arrive On Green	0.09	0.27	0.27	0.09	0.27	0.27	0.02	0.09	0.09	0.17	0.24	0.24
Sat Flow, veh/h	1569	3233	1454	1594	1702	1490	1581	1561	1490	1594	1763	1434
Grp Volume(v), veh/h	66	302	44	72	347	271	17	4	39	211	185	176
Grp Sat Flow(s),veh/h/ln	1569	1617	1454	1594	1702	1490	1581	1561	1490	1594	1683	1514
Q Serve(g_s), s	2.3	4.2	1.3	2.4	10.5	9.1	0.6	0.1	1.3	7.2	5.3	5.7
Cycle Q Clear(g_c), s	2.3	4.2	1.3	2.4	10.5	9.1	0.6	0.1	1.3	7.2	5.3	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	139	888	399	141	467	409	33	138	263	272	400	360
V/C Ratio(X)	0.48	0.34	0.11	0.51	0.74	0.66	0.52	0.03	0.15	0.78	0.46	0.49
Avail Cap(c_a), veh/h	494	1858	835	502	978	856	168	856	948	487	1259	1132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	16.4	15.3	24.6	18.7	18.2	27.4	23.6	19.7	22.4	18.5	18.6
Incr Delay (d2), s/veh	2.5	0.2	0.1	2.8	2.3	1.8	12.1	0.1	0.3	4.8	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.4	0.4	1.0	4.0	3.0	0.3	0.0	0.4	2.8	2.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	16.6	15.5	27.5	21.0	20.0	39.5	23.7	19.9	27.2	19.3	19.6
LnGrp LOS	C	B	B	C	C	C	D	C	B	C	B	B
Approach Vol, veh/h		412			690			60			572	
Approach Delay, s/veh		18.2			21.3			25.7			22.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	21.5	5.9	19.5	9.7	21.5	14.3	11.0
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 18	32.5	* 6	42.3	* 18	32.5	* 17	31.0
Max Q Clear Time (g_c+I1), s	4.4	6.2	2.6	7.7	4.3	12.5	9.2	3.3
Green Ext Time (p_c), s	0.1	2.2	0.0	2.4	0.1	3.0	0.4	0.1

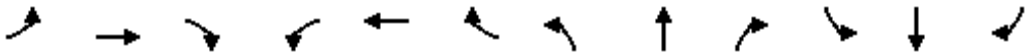
Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	288	97	46	506	273	32	262	49	126	17	83
Future Volume (vph)	112	288	97	46	506	273	32	262	49	126	17	83
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.976			0.876	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2730	1731	1471	1509	1748	1500	1553	3131	0	1538	1383	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2730	1731	1471	1509	1748	1500	1553	3131	0	1538	1383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			286		17			97	
Link Speed (mph)		30			45			35			30	
Link Distance (ft)		720			275			1384			978	
Travel Time (s)		16.4			4.2			27.0			22.2	
Confl. Peds. (#/hr)									1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	4%	4%	7%	3%	2%	4%	7%	3%	5%	9%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	130	335	113	53	588	317	37	305	57	147	20	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	335	113	53	588	317	37	362	0	147	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												

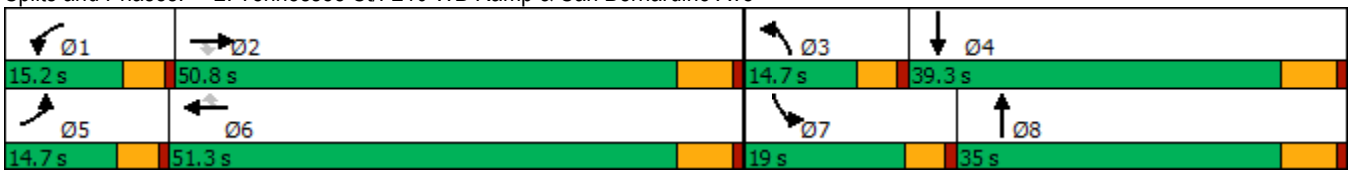


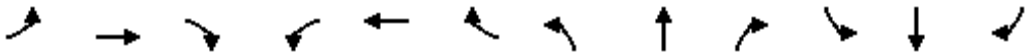
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	14.7	50.8	50.8	15.2	51.3	51.3	14.7	35.0		19.0	39.3	
Total Split (%)	12.3%	42.3%	42.3%	12.7%	42.8%	42.8%	12.3%	29.2%		15.8%	32.8%	
Maximum Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		1			0	
Act Effct Green (s)	10.2	43.2	43.2	10.4	39.6	39.6	10.2	17.9		13.4	28.0	
Actuated g/C Ratio	0.10	0.42	0.42	0.10	0.38	0.38	0.10	0.17		0.13	0.27	
v/c Ratio	0.48	0.46	0.17	0.35	0.88	0.42	0.24	0.65		0.73	0.26	
Control Delay	54.0	26.6	5.1	54.9	45.5	5.9	52.2	44.1		67.8	11.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.0	26.6	5.1	54.9	45.5	5.9	52.2	44.1		67.8	11.7	
LOS	D	C	A	D	D	A	D	D		E	B	
Approach Delay		28.6			32.9			44.9			42.9	
Approach LOS		C			C			D			D	
90th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Ped		Max	Hold	
70th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	19.2		14.3	23.5	
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	10.0	43.9	43.9	10.0	43.9	43.9	10.0	17.1		14.3	21.4	
50th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Max	Gap		Max	Hold	
30th %ile Green (s)	10.0	37.3	37.3	10.0	37.3	37.3	0.0	14.8		14.0	33.5	
30th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Skip	Gap		Gap	Hold	
10th %ile Green (s)	10.0	42.1	42.1	0.0	27.4	27.4	0.0	11.2		10.1	26.0	
10th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	102	203	12	43	426	34	30	261		107	22	
Fuel Used(gal)	2	4	1	1	13	2	1	11		3	1	
CO Emissions (g/hr)	169	300	50	90	884	153	83	756		230	79	
NOx Emissions (g/hr)	33	58	10	18	172	30	16	147		45	15	
VOC Emissions (g/hr)	39	70	12	21	205	35	19	175		53	18	
Dilemma Vehicles (#)	0	0	0	0	21	0	0	12		0	0	
Queue Length 50th (ft)	44	164	0	35	350	13	24	118		98	11	
Queue Length 95th (ft)	80	275	34	79	#585	65	60	160		#207	52	
Internal Link Dist (ft)		640			195			1304			898	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	270	768	715	156	784	830	153	911		217	521	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.48	0.44	0.16	0.34	0.75	0.38	0.24	0.40		0.68	0.22	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 102.9			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 35.1		Intersection LOS: D	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 120			
70th %ile Actuated Cycle: 110.2			
50th %ile Actuated Cycle: 106.7			
30th %ile Actuated Cycle: 97.5			
10th %ile Actuated Cycle: 80.1			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	288	97	46	506	273	32	262	49	126	17	83
Future Volume (veh/h)	112	288	97	46	506	273	32	262	49	126	17	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1500	1744	1744	1607	1758	1772	1647	1702	1758	1634	1674	1589
Adj Flow Rate, veh/h	130	335	113	53	588	317	37	305	57	147	20	97
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	4	4	7	3	2	4	7	3	5	9	15
Cap, veh/h	301	711	602	126	670	573	106	420	77	177	50	242
Arrive On Green	0.11	0.41	0.41	0.08	0.38	0.38	0.07	0.15	0.15	0.11	0.20	0.20
Sat Flow, veh/h	2772	1744	1478	1531	1758	1502	1569	2724	503	1556	249	1207
Grp Volume(v), veh/h	130	335	113	53	588	317	37	179	183	147	0	117
Grp Sat Flow(s),veh/h/ln	1386	1744	1478	1531	1758	1502	1569	1617	1610	1556	0	1456
Q Serve(g_s), s	3.9	12.4	4.3	2.9	27.4	14.6	2.0	9.3	9.6	8.2	0.0	6.2
Cycle Q Clear(g_c), s	3.9	12.4	4.3	2.9	27.4	14.6	2.0	9.3	9.6	8.2	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.83
Lane Grp Cap(c), veh/h	301	711	602	126	670	573	106	249	248	177	0	291
V/C Ratio(X)	0.43	0.47	0.19	0.42	0.88	0.55	0.35	0.72	0.74	0.83	0.00	0.40
Avail Cap(c_a), veh/h	314	885	750	182	902	771	178	531	529	252	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	19.2	16.8	38.5	25.4	21.4	39.3	35.5	35.6	38.3	0.0	30.7
Incr Delay (d2), s/veh	1.0	0.5	0.1	2.2	7.6	0.8	2.0	3.9	4.2	14.7	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.9	1.4	1.1	11.7	5.0	0.8	3.8	3.9	3.8	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	19.7	16.9	40.7	33.0	22.3	41.3	39.4	39.8	53.0	0.0	31.6
LnGrp LOS	D	B	B	D	C	C	D	D	D	D	A	C
Approach Vol, veh/h		578			958			399			264	
Approach Delay, s/veh		23.2			29.9			39.8			43.5	
Approach LOS		C			C			D			D	

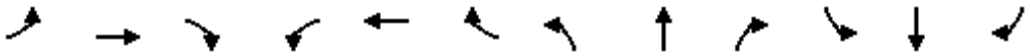
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	42.0	10.7	23.7	14.3	39.7	14.7	19.6
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 11	44.8	* 10	33.3	* 10	45.3	* 14	29.0
Max Q Clear Time (g_c+I1), s	4.9	14.4	4.0	8.2	5.9	29.4	10.2	11.6
Green Ext Time (p_c), s	0.0	2.5	0.0	0.7	0.1	4.2	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	173	125	125	361	89	161	225	98	54	102	4
Future Volume (vph)	29	173	125	125	361	89	161	225	98	54	102	4
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		1.00				0.99			
Frt			0.850		0.970				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1404	3353	1500	1538	1681	0	1553	1698	1471	1553	1698	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1404	3353	1475	1538	1681	0	1553	1698	1452	1553	1698	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		15				133			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1312	
Travel Time (s)		5.9			8.2			12.9			25.6	
Confl. Peds. (#/hr)			5			1			1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	15%	2%	2%	5%	3%	5%	4%	6%	4%	4%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	186	134	134	388	96	173	242	105	58	110	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	186	134	134	484	0	173	242	105	58	110	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

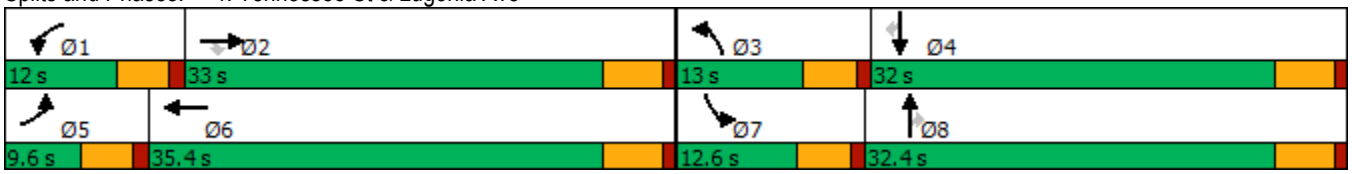


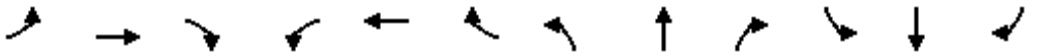
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.6	33.0	33.0	12.0	35.4		13.0	32.4	32.4	12.6	32.0	32.0
Total Split (%)	10.7%	36.7%	36.7%	13.3%	39.3%		14.4%	36.0%	36.0%	14.0%	35.6%	35.6%
Maximum Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.4	27.4	8.1	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		5	5		1			1	1		0	0
Act Effct Green (s)	5.7	15.6	15.6	8.4	26.1		9.5	18.3	18.3	7.7	14.1	14.1
Actuated g/C Ratio	0.09	0.24	0.24	0.13	0.40		0.15	0.28	0.28	0.12	0.22	0.22
v/c Ratio	0.25	0.23	0.29	0.68	0.71		0.76	0.50	0.21	0.31	0.30	0.01
Control Delay	42.1	21.3	6.3	55.6	26.7		59.4	27.1	3.9	38.5	25.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	21.3	6.3	55.6	26.7		59.4	27.1	3.9	38.5	25.7	0.0
LOS	D	C	A	E	C		E	C	A	D	C	A
Approach Delay		17.4			33.0			33.2			29.4	
Approach LOS		B			C			C			C	
90th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.0	27.0	8.1	26.6	26.6
90th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Ped	Ped	Max	Hold	Hold
70th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	19.1	19.1	8.1	18.7	18.7
70th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	0.0	15.1	15.1	7.5	27.1		8.5	16.3	16.3	8.1	15.9	15.9
50th %ile Term Code	Skip	Hold	Hold	Max	Gap		Max	Gap	Gap	Max	Hold	Hold
30th %ile Green (s)	0.0	7.6	7.6	7.5	19.6		8.5	20.8	20.8	0.0	7.8	7.8
30th %ile Term Code	Skip	Gap	Gap	Max	Hold		Max	Hold	Hold	Skip	Gap	Gap
10th %ile Green (s)	0.0	6.2	6.2	7.5	18.2		8.5	8.0	8.0	0.0	0.0	0.0
10th %ile Term Code	Skip	Gap	Gap	Max	Hold		Max	Hold	Hold	Skip	Skip	Skip
Stops (vph)	29	118	18	87	326		108	171	8	49	75	0
Fuel Used(gal)	1	3	1	3	9		4	5	1	2	3	0
CO Emissions (g/hr)	49	204	74	216	599		313	345	83	129	216	5
NOx Emissions (g/hr)	10	40	14	42	117		61	67	16	25	42	1
VOC Emissions (g/hr)	11	47	17	50	139		73	80	19	30	50	1
Dilemma Vehicles (#)	0	9	0	0	27		0	13	0	0	5	0
Queue Length 50th (ft)	12	32	0	54	150		70	86	0	22	36	0
Queue Length 95th (ft)	#46	65	40	#197	#414		#244	182	24	70	88	0
Internal Link Dist (ft)		269			341			583			1232	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	123	1615	780	198	886		227	800	754	216	788	767

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.12	0.17	0.68	0.55		0.76	0.30	0.14	0.27	0.14	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 64.8			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 29.4		Intersection LOS: C	
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 89.6			
70th %ile Actuated Cycle: 81.7			
50th %ile Actuated Cycle: 66			
30th %ile Actuated Cycle: 50.4			
10th %ile Actuated Cycle: 36.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: Tennessee St & Lugonia Ave

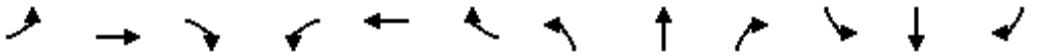




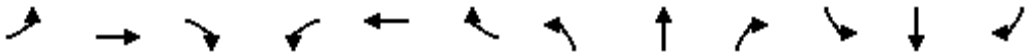
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	173	125	125	361	89	161	225	98	54	102	4
Future Volume (veh/h)	29	173	125	125	361	89	161	225	98	54	102	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1501	1772	1772	1634	1758	1730	1647	1716	1744	1647	1716	1772
Adj Flow Rate, veh/h	31	186	134	134	388	96	173	242	105	58	110	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	15	2	2	5	3	5	4	6	4	4	6	2
Cap, veh/h	49	949	421	164	480	119	211	344	296	85	207	181
Arrive On Green	0.03	0.28	0.28	0.11	0.35	0.35	0.13	0.20	0.20	0.05	0.12	0.12
Sat Flow, veh/h	1430	3367	1494	1556	1360	337	1569	1716	1476	1569	1716	1502
Grp Volume(v), veh/h	31	186	134	134	0	484	173	242	105	58	110	4
Grp Sat Flow(s),veh/h/ln	1430	1683	1494	1556	0	1697	1569	1716	1476	1569	1716	1502
Q Serve(g_s), s	1.1	2.2	3.8	4.5	0.0	13.7	5.7	7.0	3.3	1.9	3.2	0.1
Cycle Q Clear(g_c), s	1.1	2.2	3.8	4.5	0.0	13.7	5.7	7.0	3.3	1.9	3.2	0.1
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	949	421	164	0	599	211	344	296	85	207	181
V/C Ratio(X)	0.63	0.20	0.32	0.82	0.00	0.81	0.82	0.70	0.35	0.68	0.53	0.02
Avail Cap(c_a), veh/h	137	1775	788	220	0	971	251	885	761	239	872	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	14.5	15.0	23.2	0.0	15.6	22.4	19.7	18.3	24.7	21.9	20.6
Incr Delay (d2), s/veh	12.4	0.1	0.4	15.8	0.0	2.7	16.7	2.6	0.7	9.3	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	1.1	2.2	0.0	4.8	2.9	2.7	1.0	0.9	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	14.6	15.5	39.1	0.0	18.2	39.0	22.4	19.0	33.9	24.1	20.6
LnGrp LOS	D	B	B	D	A	B	D	C	B	C	C	C
Approach Vol, veh/h		351			618			520			172	
Approach Delay, s/veh		17.0			22.7			27.2			27.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	20.0	11.6	11.4	6.3	23.7	7.4	15.7
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.5	28.0	8.5	27.0	5.1	30.4	8.1	27.4
Max Q Clear Time (g_c+I1), s	6.5	5.8	7.7	5.2	3.1	15.7	3.9	9.0
Green Ext Time (p_c), s	0.0	1.5	0.0	0.5	0.0	2.6	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	217	5	161	209	427	0	0	315	108
Future Volume (vph)	0	0	0	217	5	161	209	427	0	0	315	108
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.937						0.952	
Flt Protected					0.972		0.950					
Satd. Flow (prot)	0	0	0	0	3050	0	1568	3196	0	0	3132	0
Flt Permitted					0.972		0.950					
Satd. Flow (perm)	0	0	0	0	3050	0	1568	3196	0	0	3132	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					166						87	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1108			612			817	
Travel Time (s)		19.4			25.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	13%	2%	3%	7%	2%	2%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	224	5	166	215	440	0	0	325	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	395	0	215	440	0	0	477	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (ft)				20	100		20	100			100	
Trailing Detector (ft)				0	0		0	0			0	
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4								
Detector Phase				4	4		1	6			2	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				27.0	27.0		31.0	63.0			32.0	
Total Split (%)				30.0%	30.0%		34.4%	70.0%			35.6%	
Maximum Green (s)				21.5	21.5		26.0	57.5			26.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								2				
Act Effct Green (s)					12.6		17.6	66.4			43.8	
Actuated g/C Ratio					0.14		0.20	0.74			0.49	
v/c Ratio					0.69		0.70	0.19			0.30	
Control Delay					27.2		36.6	7.7			13.5	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					27.2		36.6	7.7			13.5	
LOS					C		D	A			B	
Approach Delay					27.2			17.2			13.5	
Approach LOS					C			B			B	
90th %ile Green (s)				18.2	18.2		24.2	60.8			31.6	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				14.5	14.5		20.4	64.5			39.1	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				12.4	12.4		17.6	66.6			44.0	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				10.4	10.4		14.8	68.6			48.8	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				7.5	7.5		10.8	71.5			55.7	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					206		192	238			209	
Fuel Used(gal)					7		4	4			7	
CO Emissions (g/hr)					459		274	304			507	
NOx Emissions (g/hr)					89		53	59			99	
VOC Emissions (g/hr)					106		64	70			118	
Dilemma Vehicles (#)					0		0	32			23	
Queue Length 50th (ft)					64		117	87			65	
Queue Length 95th (ft)					105		186	116			128	
Internal Link Dist (ft)		775			1028			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					854		452	2358			1570	

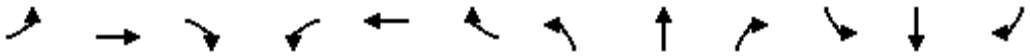
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.46		0.48	0.19			0.30	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 46.5 (52%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Tennessee St & I-10 WB Ramps

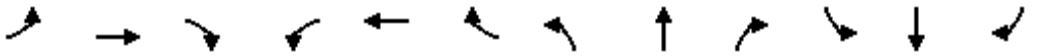




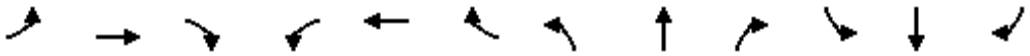
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	217	5	161	209	427	0	0	315	108
Future Volume (veh/h)	0	0	0	217	5	161	209	427	0	0	315	108
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1772	1617	1772	1660	1702	0	0	1758	1716
Adj Flow Rate, veh/h				224	5	166	215	440	0	0	325	152
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Percent Heavy Veh, %				2	13	2	3	7	0	0	3	6
Cap, veh/h				273	7	237	246	2265	0	0	1089	499
Arrive On Green				0.18	0.18	0.18	0.31	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1540	40	1337	1581	3318	0	0	2313	1019
Grp Volume(v), veh/h				224	0	171	215	440	0	0	242	235
Grp Sat Flow(s),veh/h/ln				1540	0	1377	1581	1617	0	0	1670	1574
Q Serve(g_s), s				12.6	0.0	10.5	11.6	0.0	0.0	0.0	7.8	8.1
Cycle Q Clear(g_c), s				12.6	0.0	10.5	11.6	0.0	0.0	0.0	7.8	8.1
Prop In Lane				1.00		0.97	1.00		0.00	0.00		0.65
Lane Grp Cap(c), veh/h				273	0	244	246	2265	0	0	817	771
V/C Ratio(X)				0.82	0.00	0.70	0.88	0.19	0.00	0.00	0.30	0.30
Avail Cap(c_a), veh/h				368	0	329	457	2265	0	0	817	771
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.94	0.94	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.6	0.0	34.8	30.2	0.0	0.0	0.0	13.7	13.8
Incr Delay (d2), s/veh				10.3	0.0	4.1	9.0	0.2	0.0	0.0	0.9	1.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.4	0.0	3.7	4.2	0.1	0.0	0.0	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.9	0.0	38.9	39.2	0.2	0.0	0.0	14.6	14.8
LnGrp LOS				D	A	D	D	A	A	A	B	B
Approach Vol, veh/h					395			655			477	
Approach Delay, s/veh					42.9			13.0			14.7	
Approach LOS					D			B			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.0	49.6		21.5		68.5						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	26.0	26.5		21.5		57.5						
Max Q Clear Time (g_c+I1), s	13.6	10.1		14.6		2.0						
Green Ext Time (p_c), s	0.5	2.6		1.4		3.2						

Intersection Summary		
HCM 6th Ctrl Delay		21.3
HCM 6th LOS		C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	144	321	0	0	0	0	509	112	108	424	0
Future Volume (vph)	127	144	321	0	0	0	0	509	112	108	424	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.919						0.973				
Flt Protected		0.989								0.950		
Satd. Flow (prot)	0	2977	0	0	0	0	0	3169	0	1553	3353	0
Flt Permitted		0.989								0.950		
Satd. Flow (perm)	0	2977	0	0	0	0	0	3169	0	1553	3353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		328						33				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	7%	3%	2%	2%	2%	2%	5%	5%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	130	147	328	0	0	0	0	519	114	110	433	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	0	0	0	0	0	633	0	110	433	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												



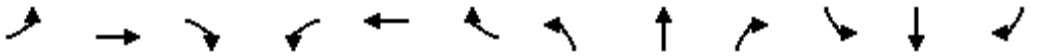
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	31.0	31.0						39.0		20.0	59.0	
Total Split (%)	34.4%	34.4%						43.3%		22.2%	65.6%	
Maximum Green (s)	25.5	25.5						33.5		15.0	53.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								3				
Act Effct Green (s)		15.9						48.9		11.6	63.1	
Actuated g/C Ratio		0.18						0.54		0.13	0.70	
v/c Ratio		0.76						0.36		0.55	0.18	
Control Delay		21.8						14.5		40.8	2.3	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		21.8						14.5		40.8	2.3	
LOS		C						B		D	A	
Approach Delay		21.8						14.5			10.1	
Approach LOS		C						B			B	
90th %ile Green (s)	23.7	23.7						34.0		16.3	55.3	
90th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
70th %ile Green (s)	19.1	19.1						41.3		13.6	59.9	
70th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
50th %ile Green (s)	15.6	15.6						46.8		11.6	63.4	
50th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
30th %ile Green (s)	12.9	12.9						51.4		9.7	66.1	
30th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
10th %ile Green (s)	8.0	8.0						71.0		0.0	71.0	
10th %ile Term Code	Gap	Gap						Coord		Skip	Coord	
Stops (vph)		258						344		95	106	
Fuel Used(gal)		10						7		2	3	
CO Emissions (g/hr)		676						492		146	201	
NOx Emissions (g/hr)		132						96		28	39	
VOC Emissions (g/hr)		157						114		34	47	
Dilemma Vehicles (#)		0						34		0	7	
Queue Length 50th (ft)		77						101		53	9	
Queue Length 95th (ft)		123						188		82	12	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1078						1736		263	2352	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.56						0.36		0.42	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77.6 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Tennessee St & I-10 EB Ramps

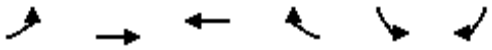




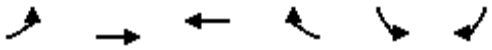
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	144	321	0	0	0	0	509	112	108	424	0
Future Volume (veh/h)	127	144	321	0	0	0	0	509	112	108	424	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1730	1702	1758				0	1730	1730	1647	1772	0
Adj Flow Rate, veh/h	130	147	328				0	519	114	110	433	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	7	3				0	5	5	4	2	0
Cap, veh/h	200	226	370				0	1283	280	137	2092	0
Arrive On Green	0.26	0.26	0.26				0.00	0.48	0.48	0.03	0.21	0.00
Sat Flow, veh/h	780	882	1442				0	2768	586	1569	3455	0
Grp Volume(v), veh/h	277	0	328				0	317	316	110	433	0
Grp Sat Flow(s),veh/h/ln	1663	0	1442				0	1643	1624	1569	1683	0
Q Serve(g_s), s	13.4	0.0	19.7				0.0	11.2	11.3	6.3	9.6	0.0
Cycle Q Clear(g_c), s	13.4	0.0	19.7				0.0	11.2	11.3	6.3	9.6	0.0
Prop In Lane	0.47		1.00				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	427	0	370				0	786	777	137	2092	0
V/C Ratio(X)	0.65	0.00	0.89				0.00	0.40	0.41	0.80	0.21	0.00
Avail Cap(c_a), veh/h	471	0	409				0	786	777	261	2092	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.96	0.96	0.00
Uniform Delay (d), s/veh	29.8	0.0	32.2				0.0	15.2	15.2	42.9	17.4	0.0
Incr Delay (d2), s/veh	2.7	0.0	19.1				0.0	1.5	1.6	10.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	8.6				0.0	4.2	4.2	2.9	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	0.0	51.3				0.0	16.7	16.8	52.9	17.6	0.0
LnGrp LOS	C	A	D				A	B	B	D	B	A
Approach Vol, veh/h		605						633			543	
Approach Delay, s/veh		42.7						16.7			24.7	
Approach LOS		D						B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		61.4			12.9	48.6		28.6				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		53.5			15.0	33.5		25.5				
Max Q Clear Time (g_c+I1), s		11.6			8.3	13.3		21.7				
Green Ext Time (p_c), s		3.1			0.1	3.8		1.4				

Intersection Summary			
HCM 6th Ctrl Delay		28.0	
HCM 6th LOS		C	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	185	442	84	142	64
Future Volume (vph)	14	185	442	84	142	64
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.976			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3320	3219	0	2891	1485
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3320	3219	0	2891	1485
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			53			67
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	15	195	465	88	149	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	195	553	0	149	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



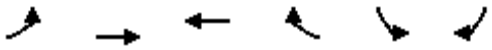
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	46.0	37.0		14.0	14.0
Total Split (%)	15.0%	76.7%	61.7%		23.3%	23.3%
Maximum Green (s)	4.2	39.7	30.7		9.2	9.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)			7.0			
Flash Dont Walk (s)			19.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)	4.3	19.0	17.7		7.2	7.2
Actuated g/C Ratio	0.13	0.57	0.53		0.21	0.21
v/c Ratio	0.07	0.10	0.32		0.24	0.18
Control Delay	16.6	5.4	7.4		13.2	6.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	16.6	5.4	7.4		13.2	6.2
LOS	B	A	A		B	A
Approach Delay		6.2	7.4		11.0	
Approach LOS		A	A		B	
90th %ile Green (s)	4.2	26.0	17.0		9.2	9.2
90th %ile Term Code	Max	Hold	Gap		Max	Max
70th %ile Green (s)	0.0	11.7	11.7		7.5	7.5
70th %ile Term Code	Skip	Hold	Gap		Gap	Gap
50th %ile Green (s)	0.0	11.4	11.4		6.9	6.9
50th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
30th %ile Green (s)	0.0	16.9	16.9		6.6	6.6
30th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
10th %ile Green (s)	0.0	21.3	21.3		0.0	0.0
10th %ile Term Code	Skip	Dwell	Dwell		Skip	Skip
Stops (vph)	16	87	278		106	20
Fuel Used(gal)	0	4	7		4	1
CO Emissions (g/hr)	31	298	460		272	101
NOx Emissions (g/hr)	6	58	90		53	20
VOC Emissions (g/hr)	7	69	107		63	23
Dilemma Vehicles (#)	0	22	59		0	0
Queue Length 50th (ft)	2	8	26		9	0
Queue Length 95th (ft)	17	21	84		36	23
Internal Link Dist (ft)		2474	430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	204	3225	2934		817	468

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.07	0.06	0.19		0.18	0.14

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 33.6			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 46.3			
70th %ile Actuated Cycle: 30.3			
50th %ile Actuated Cycle: 29.4			
30th %ile Actuated Cycle: 34.6			
10th %ile Actuated Cycle: 27.6			

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	185	442	84	142	64
Future Volume (veh/h)	14	185	442	84	142	64
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1758	1744	1772	1575	1758
Adj Flow Rate, veh/h	15	195	465	88	149	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	3	4	2	2	3
Cap, veh/h	19	1626	873	164	407	208
Arrive On Green	0.01	0.49	0.31	0.31	0.14	0.14
Sat Flow, veh/h	1594	3428	2870	523	2910	1490
Grp Volume(v), veh/h	15	195	276	277	149	67
Grp Sat Flow(s),veh/h/ln	1594	1670	1657	1650	1455	1490
Q Serve(g_s), s	0.3	0.9	4.1	4.1	1.4	1.2
Cycle Q Clear(g_c), s	0.3	0.9	4.1	4.1	1.4	1.2
Prop In Lane	1.00			0.32	1.00	1.00
Lane Grp Cap(c), veh/h	19	1626	520	518	407	208
V/C Ratio(X)	0.80	0.12	0.53	0.54	0.37	0.32
Avail Cap(c_a), veh/h	225	4458	1710	1703	900	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	4.2	8.4	8.4	11.6	11.5
Incr Delay (d2), s/veh	52.5	0.0	0.8	0.9	0.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.9	0.9	0.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	67.2	4.2	9.2	9.3	12.1	12.4
LnGrp LOS	E	A	A	A	B	B
Approach Vol, veh/h		210	553		216	
Approach Delay, s/veh		8.7	9.3		12.2	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		20.8		9.0	5.1	15.6
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 40		* 9.2	* 4.2	* 31
Max Q Clear Time (g_c+I1), s		2.9		3.4	2.3	6.1
Green Ext Time (p_c), s		1.2		0.3	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	298	84	39	531	88	26
Future Volume (vph)	298	84	39	531	88	26
Ideal Flow (vphpl)	1800	1800	1700	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			50		50	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98				
Frt		0.850			0.969	
Flt Protected			0.950		0.963	
Satd. Flow (prot)	3257	1515	1583	1765	1606	0
Flt Permitted			0.950		0.963	
Satd. Flow (perm)	3257	1481	1583	1765	1606	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		95			18	
Link Speed (mph)	35			35	40	
Link Distance (ft)	710			320	976	
Travel Time (s)	13.8			6.2	16.6	
Confl. Peds. (#/hr)		1				
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	2%	2%	3%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	339	95	44	603	100	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	339	95	44	603	130	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.15	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Detector Phase	2	2	1	6	4	
Switch Phase						



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	15.0	15.0	10.0	15.0	15.0	
Minimum Split (s)	23.3	23.3	15.0	23.3	23.0	
Total Split (s)	39.0	39.0	17.0	56.0	24.0	
Total Split (%)	48.8%	48.8%	21.3%	70.0%	30.0%	
Maximum Green (s)	33.7	33.7	12.0	50.7	19.0	
Yellow Time (s)	4.3	4.3	4.0	4.3	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.3	5.3	5.0	5.3	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min	None	Min	None	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	8.0	8.0				
Pedestrian Calls (#/hr)	1	1				
Act Effct Green (s)	23.6	23.6	10.3	28.8	15.4	
Actuated g/C Ratio	0.49	0.49	0.22	0.60	0.32	
v/c Ratio	0.21	0.12	0.13	0.57	0.25	
Control Delay	12.7	4.9	19.6	11.4	14.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.7	4.9	19.6	11.4	14.7	
LOS	B	A	B	B	B	
Approach Delay	11.0			12.0	14.7	
Approach LOS	B			B	B	
90th %ile Green (s)	16.3	16.3	10.0	31.3	15.0	
90th %ile Term Code	Hold	Hold	Min	Gap	Min	
70th %ile Green (s)	15.0	15.0	10.0	30.0	15.0	
70th %ile Term Code	Min	Min	Min	Hold	Min	
50th %ile Green (s)	20.9	20.9	0.0	20.9	15.0	
50th %ile Term Code	Hold	Hold	Skip	Gap	Min	
30th %ile Green (s)	21.0	21.0	0.0	21.0	15.0	
30th %ile Term Code	Dwell	Dwell	Skip	Dwell	Min	
10th %ile Green (s)	30.0	30.0	0.0	30.0	0.0	
10th %ile Term Code	Dwell	Dwell	Skip	Dwell	Skip	
Stops (vph)	186	18	35	336	74	
Fuel Used(gal)	5	1	1	5	2	
CO Emissions (g/hr)	322	63	36	349	128	
NOx Emissions (g/hr)	63	12	7	68	25	
VOC Emissions (g/hr)	75	15	8	81	30	
Dilemma Vehicles (#)	21	0	0	36	0	
Queue Length 50th (ft)	26	0	9	123	21	
Queue Length 95th (ft)	75	26	35	203	66	
Internal Link Dist (ft)	630			240	896	
Turn Bay Length (ft)			100			
Base Capacity (vph)	2355	1097	407	1699	665	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.09	0.11	0.35	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 47.9			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 56.6			
70th %ile Actuated Cycle: 55.3			
50th %ile Actuated Cycle: 46.2			
30th %ile Actuated Cycle: 46.3			
10th %ile Actuated Cycle: 35.3			

Splits and Phases: 9: New York St & Lugonia Ave





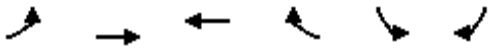
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	298	84	39	531	88	26
Future Volume (veh/h)	298	84	39	531	88	26
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1730	1786	1673	1772	1758	1660
Adj Flow Rate, veh/h	339	95	44	603	100	30
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	1	2	2	3	10
Cap, veh/h	1050	483	148	920	325	98
Arrive On Green	0.32	0.32	0.09	0.52	0.26	0.26
Sat Flow, veh/h	3373	1511	1594	1772	1243	373
Grp Volume(v), veh/h	339	95	44	603	131	0
Grp Sat Flow(s),veh/h/ln	1643	1511	1594	1772	1629	0
Q Serve(g_s), s	3.7	2.1	1.2	11.6	3.0	0.0
Cycle Q Clear(g_c), s	3.7	2.1	1.2	11.6	3.0	0.0
Prop In Lane		1.00	1.00		0.76	0.23
Lane Grp Cap(c), veh/h	1050	483	148	920	426	0
V/C Ratio(X)	0.32	0.20	0.30	0.66	0.31	0.00
Avail Cap(c_a), veh/h	2359	1085	407	1913	659	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.1	11.6	19.9	8.2	13.9	0.0
Incr Delay (d2), s/veh	0.2	0.2	1.1	0.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.6	0.4	3.1	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	11.8	21.0	9.0	14.3	0.0
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	434			647	131	
Approach Delay, s/veh	12.2			9.8	14.3	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.4	20.3		17.3		29.7
Change Period (Y+Rc), s	5.0	5.3		5.0		5.3
Max Green Setting (Gmax), s	12.0	33.7		19.0		50.7
Max Q Clear Time (g_c+I1), s	3.2	5.7		5.0		13.6
Green Ext Time (p_c), s	0.0	2.5		0.3		4.4

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	298	534	3	5	36
Future Volume (vph)	26	298	534	3	5	36
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.882	
Flt Protected	0.950				0.994	
Satd. Flow (prot)	1568	3226	1763	0	1547	0
Flt Permitted	0.950				0.994	
Satd. Flow (perm)	1568	3226	1763	0	1547	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	6%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	30	339	607	3	6	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	339	610	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

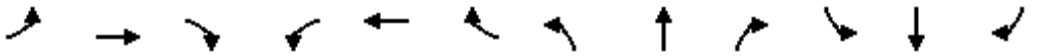
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	298	534	3	5	36
Future Vol, veh/h	26	298	534	3	5	36
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	6	2	2	2	2
Mvmt Flow	30	339	607	3	6	41

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	611	0	-	0	840	610
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	4.145	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.2285	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	960	-	-	-	319	493
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	787	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	959	-	-	-	308	493
Mov Cap-2 Maneuver	-	-	-	-	308	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	786	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	959	-	-	-	459
HCM Lane V/C Ratio	0.031	-	-	-	0.102
HCM Control Delay (s)	8.9	-	-	-	13.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	22	0	3	0	6	23	0	6	0
Future Volume (vph)	0	0	0	22	0	3	0	6	23	0	6	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.983			0.892				
Flt Protected					0.958							
Satd. Flow (prot)	0	1765	0	0	1678	0	0	1565	0	0	1782	0
Flt Permitted					0.958							
Satd. Flow (perm)	0	1765	0	0	1678	0	0	1565	0	0	1782	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		326			965			1320			300	
Travel Time (s)		7.4			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	3%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	27	0	4	0	7	28	0	7	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	31	0	0	35	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

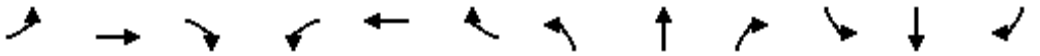
Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	22	0	3	0	6	23	0	6	0
Future Vol, veh/h	0	0	0	22	0	3	0	6	23	0	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	1	2	1	2	1	3	1	1	2
Mvmt Flow	0	0	0	27	0	4	0	7	28	0	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4	0	0	1	0	0	-	59	1	75	57	-
Stage 1	-	-	-	-	-	-	-	1	-	56	56	-
Stage 2	-	-	-	-	-	-	-	58	-	19	1	-
Critical Hdwy	4.12	-	-	4.11	-	-	-	6.51	6.23	7.11	6.51	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	-	4.009	3.327	3.509	4.009	-
Pot Cap-1 Maneuver	1618	-	-	1628	-	-	0	834	1081	917	836	0
Stage 1	-	-	-	-	-	-	0	897	-	959	850	0
Stage 2	-	-	-	-	-	-	0	849	-	1003	897	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1618	-	-	1628	-	-	-	820	1081	876	822	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	820	-	876	822	-
Stage 1	-	-	-	-	-	-	-	897	-	959	836	-
Stage 2	-	-	-	-	-	-	-	835	-	969	897	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	6.4	8.7	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1014	1618	-	-	1628	-	-	822
HCM Lane V/C Ratio	0.034	-	-	-	0.016	-	-	0.009
HCM Control Delay (s)	8.7	0	-	-	7.2	0	-	9.4
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	10	15	131	25	49	5	182	44	42	252	6
Future Volume (vph)	25	10	15	131	25	49	5	182	44	42	252	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.959			0.967			0.974			0.997	
Flt Protected		0.976			0.969			0.999			0.993	
Satd. Flow (prot)	0	1614	0	0	1662	0	0	1724	0	0	1762	0
Flt Permitted		0.976			0.969			0.999			0.993	
Satd. Flow (perm)	0	1614	0	0	1662	0	0	1724	0	0	1762	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	7%	8%	1%	1%	3%	1%	1%	4%	1%	1%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	26	11	16	138	26	52	5	192	46	44	265	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	216	0	0	243	0	0	315	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

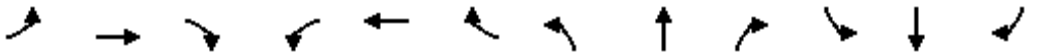
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

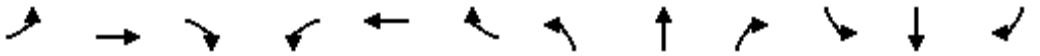
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	10	15	131	25	49	5	182	44	42	252	6
Future Vol, veh/h	25	10	15	131	25	49	5	182	44	42	252	6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	7	8	1	1	3	1	1	4	1	1	7
Mvmt Flow	26	11	16	138	26	52	5	192	46	44	265	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	11	10.6	12
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	50%	64%	14%
Vol Thru, %	79%	20%	12%	84%
Vol Right, %	19%	30%	24%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	231	50	205	300
LT Vol	5	25	131	42
Through Vol	182	10	25	252
RT Vol	44	15	49	6
Lane Flow Rate	243	53	216	316
Geometry Grp	1	1	1	1
Degree of Util (X)	0.34	0.083	0.324	0.444
Departure Headway (Hd)	5.035	5.653	5.409	5.056
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	717	633	665	717
Service Time	3.045	3.696	3.443	3.065
HCM Lane V/C Ratio	0.339	0.084	0.325	0.441
HCM Control Delay	10.6	9.2	11	12
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.5	0.3	1.4	2.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	223	45	191	422	25	45	174	94	23	295	72
Future Volume (vph)	35	223	45	191	422	25	45	174	94	23	295	72
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.992				0.850			0.850
Flt Protected	0.950			0.950				0.990			0.996	
Satd. Flow (prot)	1599	3211	0	1599	3315	0	0	1764	1443	0	1773	1500
Flt Permitted	0.950			0.950				0.785			0.965	
Satd. Flow (perm)	1599	3211	0	1599	3315	0	0	1399	1443	0	1717	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			9				135			135
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		425			524			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	4%	3%	1%	2%	8%	1%	1%	6%	3%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	38	242	49	208	459	27	49	189	102	25	321	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	291	0	208	486	0	0	238	102	0	346	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												



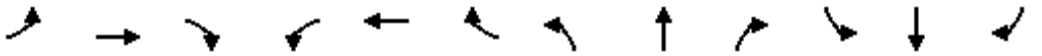
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	11.1	32.0		24.0	44.9		34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	12.3%	35.6%		26.7%	49.9%		37.8%	37.8%	37.8%	37.8%	37.8%	37.8%
Maximum Green (s)	6.4	27.3		19.3	40.2		29.3	29.3	29.3	29.3	29.3	29.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.7	4.7		4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	Min	Min	Min
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	6.4	10.6		13.0	24.9			17.1	17.1		17.1	17.1
Actuated g/C Ratio	0.12	0.19		0.23	0.45			0.31	0.31		0.31	0.31
v/c Ratio	0.21	0.46		0.56	0.33			0.55	0.19		0.66	0.14
Control Delay	30.8	22.5		27.1	12.8			22.6	2.8		24.2	1.4
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	30.8	22.5		27.1	12.8			22.6	2.8		24.2	1.4
LOS	C	C		C	B			C	A		C	A
Approach Delay		23.4			17.1			16.7			20.0	
Approach LOS		C			B			B			C	
90th %ile Green (s)	6.4	14.9		19.3	27.8		27.1	27.1	27.1	27.1	27.1	27.1
90th %ile Term Code	Max	Gap		Max	Hold		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	6.4	12.3		15.8	21.7		20.6	20.6	20.6	20.6	20.6	20.6
70th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
50th %ile Green (s)	0.0	10.4		12.8	27.9		16.6	16.6	16.6	16.6	16.6	16.6
50th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
30th %ile Green (s)	0.0	8.8		10.4	23.9		13.4	13.4	13.4	13.4	13.4	13.4
30th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
10th %ile Green (s)	0.0	7.1		7.8	19.6		9.9	9.9	9.9	9.9	9.9	9.9
10th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
Stops (vph)	33	194		153	263			166	7		250	3
Fuel Used(gal)	1	5		3	5			4	1		7	1
CO Emissions (g/hr)	50	320		204	338			254	39		482	49
NOx Emissions (g/hr)	10	62		40	66			49	7		94	10
VOC Emissions (g/hr)	12	74		47	78			59	9		112	11
Dilemma Vehicles (#)	0	16		0	28			14	0		21	0
Queue Length 50th (ft)	11	39		58	40			62	0		94	0
Queue Length 95th (ft)	45	93		147	124			149	18		208	8
Internal Link Dist (ft)		345			444			591			1254	
Turn Bay Length (ft)	105			100					50			50
Base Capacity (vph)	194	1676		585	2508			777	862		954	893

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.20	0.17		0.36	0.19			0.31	0.12		0.36	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 55.5			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 75.4			
70th %ile Actuated Cycle: 62.8			
50th %ile Actuated Cycle: 53.9			
30th %ile Actuated Cycle: 46.7			
10th %ile Actuated Cycle: 38.9			

Splits and Phases: 13: Texas St & Lugonia Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	223	45	191	422	25	45	174	94	23	295	72
Future Volume (veh/h)	35	223	45	191	422	25	45	174	94	23	295	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1744	1758	1687	1772	1688	1786	1786	1716	1758	1786	1772
Adj Flow Rate, veh/h	38	242	49	208	459	27	49	189	102	25	321	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	4	3	1	2	8	1	1	6	3	1	2
Cap, veh/h	61	386	77	252	836	49	72	223	689	63	475	712
Arrive On Green	0.04	0.14	0.14	0.16	0.26	0.26	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1606	2754	548	1606	3232	190	4	471	1454	2	1002	1502
Grp Volume(v), veh/h	38	144	147	208	239	247	238	0	102	346	0	78
Grp Sat Flow(s),veh/h/ln	1606	1657	1645	1606	1683	1738	475	0	1454	1004	0	1502
Q Serve(g_s), s	1.4	5.0	5.2	7.7	7.5	7.6	0.4	0.0	2.4	0.4	0.0	1.8
Cycle Q Clear(g_c), s	1.4	5.0	5.2	7.7	7.5	7.6	29.2	0.0	2.4	29.2	0.0	1.8
Prop In Lane	1.00		0.33	1.00		0.11	0.21		1.00	0.07		1.00
Lane Grp Cap(c), veh/h	61	232	230	252	436	450	296	0	689	538	0	712
V/C Ratio(X)	0.62	0.62	0.64	0.82	0.55	0.55	0.81	0.00	0.15	0.64	0.00	0.11
Avail Cap(c_a), veh/h	167	735	730	504	1100	1135	299	0	692	542	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.1	24.9	25.0	25.1	19.7	19.7	14.4	0.0	9.2	12.1	0.0	9.0
Incr Delay (d2), s/veh	9.7	2.7	2.9	6.7	1.1	1.1	14.7	0.0	0.1	2.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.0	2.1	3.2	2.8	2.9	2.8	0.0	0.6	2.8	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	27.6	27.9	31.8	20.8	20.8	29.0	0.0	9.3	14.6	0.0	9.1
LnGrp LOS	D	C	C	C	C	C	C	A	A	B	A	A
Approach Vol, veh/h		329			694			340			424	
Approach Delay, s/veh		29.1			24.1			23.1			13.6	
Approach LOS		C			C			C			B	

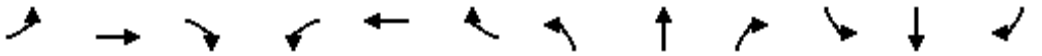
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	13.4		33.9	7.1	20.7		33.9				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 19	* 27		* 29	* 6.4	* 40		* 29				
Max Q Clear Time (g_c+I1), s	9.7	7.2		31.2	3.4	9.6		31.2				
Green Ext Time (p_c), s	0.4	1.5		0.0	0.0	3.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	22.3	
HCM 6th LOS	C	

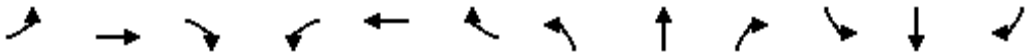
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix D:
Existing Year 2022 PM Peak Hour Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	580	70	125	230	129	40	61	269	144	256	125
Future Volume (vph)	102	580	70	125	230	129	40	61	269	144	256	125
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											1.00	
Frt			0.850			0.850			0.850		0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			155			121		75	
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		1161			720			1341			1495	
Travel Time (s)		26.4			16.4			26.1			34.0	
Confl. Peds. (#/hr)												2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	6%	4%	2%	2%	2%	3%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	105	598	72	129	237	133	41	63	277	148	264	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	598	72	129	237	133	41	63	277	148	393	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

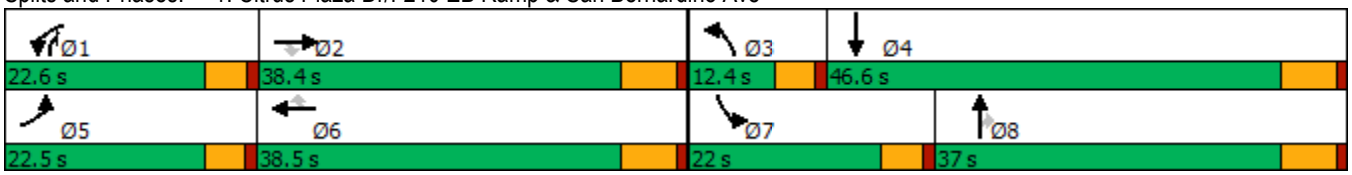


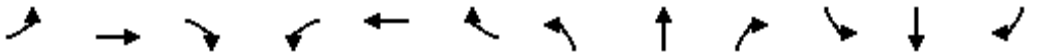
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.4	38.4	22.6	38.5	38.5	12.4	37.0	22.6	22.0	46.6	
Total Split (%)	18.8%	32.0%	32.0%	18.8%	32.1%	32.1%	10.3%	30.8%	18.8%	18.3%	38.8%	
Maximum Green (s)	17.8	32.4	32.4	17.9	32.5	32.5	7.7	31.0	17.9	17.3	40.6	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			2	
Act Effct Green (s)	11.3	21.0	21.0	12.3	25.8	25.8	7.4	10.1	24.9	14.4	19.2	
Actuated g/C Ratio	0.15	0.27	0.27	0.16	0.33	0.33	0.10	0.13	0.32	0.19	0.25	
v/c Ratio	0.45	0.66	0.14	0.51	0.42	0.22	0.27	0.27	0.49	0.51	0.47	
Control Delay	42.2	30.4	0.6	42.8	27.9	4.4	45.5	38.0	14.9	41.3	24.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.2	30.4	0.6	42.8	27.9	4.4	45.5	38.0	14.9	41.3	24.0	
LOS	D	C	A	D	C	A	D	D	B	D	C	
Approach Delay		29.2			25.5			22.0			28.7	
Approach LOS		C			C			C			C	
90th %ile Green (s)	17.4	32.4	32.4	17.9	32.9	32.9	7.7	21.4	17.9	17.3	31.0	
90th %ile Term Code	Gap	Max	Max	Max	Hold	Hold	Max	Hold	Max	Max	Ped	
70th %ile Green (s)	13.2	24.5	24.5	14.7	26.0	26.0	7.7	10.0	14.7	16.3	18.6	
70th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Gap	Hold	
50th %ile Green (s)	11.0	21.3	21.3	12.2	22.5	22.5	7.7	8.5	12.2	13.4	14.2	
50th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Gap	Hold	
30th %ile Green (s)	9.0	17.2	17.2	9.9	18.1	18.1	0.0	7.1	9.9	10.8	22.6	
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Skip	Gap	Gap	Gap	Hold	
10th %ile Green (s)	0.0	11.1	11.1	7.0	22.8	22.8	0.0	0.0	7.0	11.3	10.0	
10th %ile Term Code	Skip	Gap	Gap	Gap	Hold	Hold	Skip	Skip	Gap	Hold	Min	
Stops (vph)	85	471	0	106	170	11	38	51	105	121	238	
Fuel Used(gal)	2	11	1	2	4	1	1	2	7	4	8	
CO Emissions (g/hr)	159	800	45	166	247	63	99	141	470	249	532	
NOx Emissions (g/hr)	31	156	9	32	48	12	19	27	92	48	104	
VOC Emissions (g/hr)	37	185	10	39	57	15	23	33	109	58	123	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	3	0	0	0	
Queue Length 50th (ft)	47	131	0	57	92	0	18	28	53	65	73	
Queue Length 95th (ft)	124	252	0	147	214	32	65	77	142	168	141	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	399	1542	773	402	784	763	173	776	696	385	1854	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.26	0.39	0.09	0.32	0.30	0.17	0.24	0.08	0.40	0.38	0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 77.1			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 27.0		Intersection LOS: C	
Intersection Capacity Utilization 59.3%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 110.4			
70th %ile Actuated Cycle: 86.9			
50th %ile Actuated Cycle: 76.8			
30th %ile Actuated Cycle: 66.4			
10th %ile Actuated Cycle: 44.8			

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	580	70	125	230	129	40	61	269	144	256	125
Future Volume (veh/h)	102	580	70	125	230	129	40	61	269	144	256	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1716	1744	1673	1772	1772	1660	1772	1758
Adj Flow Rate, veh/h	105	598	72	129	237	133	41	63	277	148	264	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	6	4	2	2	2	3	2	3
Cap, veh/h	151	840	375	175	454	391	62	363	472	211	662	314
Arrive On Green	0.09	0.25	0.25	0.11	0.26	0.26	0.04	0.20	0.20	0.13	0.30	0.30
Sat Flow, veh/h	1594	3367	1502	1594	1716	1478	1594	1772	1502	1581	2214	1050
Grp Volume(v), veh/h	105	598	72	129	237	133	41	63	277	148	199	194
Grp Sat Flow(s),veh/h/ln	1594	1683	1502	1594	1716	1478	1594	1772	1502	1581	1683	1580
Q Serve(g_s), s	4.5	11.5	2.7	5.5	8.3	5.1	1.8	2.1	11.0	6.3	6.6	6.9
Cycle Q Clear(g_c), s	4.5	11.5	2.7	5.5	8.3	5.1	1.8	2.1	11.0	6.3	6.6	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	151	840	375	175	454	391	62	363	472	211	504	473
V/C Ratio(X)	0.70	0.71	0.19	0.74	0.52	0.34	0.66	0.17	0.59	0.70	0.39	0.41
Avail Cap(c_a), veh/h	401	1542	688	403	788	679	173	776	823	387	966	907
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	24.2	20.9	30.5	22.2	21.0	33.5	23.2	20.4	29.3	19.7	19.8
Incr Delay (d2), s/veh	5.7	1.1	0.2	6.0	0.9	0.5	11.2	0.2	1.2	4.2	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.4	0.9	2.3	3.3	1.7	0.9	0.8	3.7	2.6	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	25.4	21.2	36.5	23.1	21.5	44.7	23.4	21.6	33.5	20.2	20.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	C	C	C
Approach Vol, veh/h		775			499			381			541	
Approach Delay, s/veh		26.5			26.1			24.4			23.9	
Approach LOS		C			C			C			C	

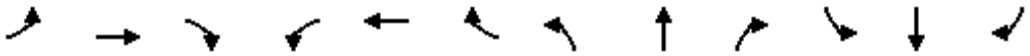
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	23.6	7.5	27.2	11.4	24.7	14.2	20.5
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 18	32.4	* 7.7	40.6	* 18	32.5	* 17	31.0
Max Q Clear Time (g_c+I1), s	7.5	13.5	3.8	8.9	6.5	10.3	8.3	13.0
Green Ext Time (p_c), s	0.2	4.2	0.0	2.6	0.2	1.8	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	481	119	23	320	159	54	374	37	184	12	110
Future Volume (vph)	393	481	119	23	320	159	54	374	37	184	12	110
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.987			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			198		8			113	
Link Speed (mph)		30			45			35			30	
Link Distance (ft)		720			275			1384			996	
Travel Time (s)		16.4			4.2			27.0			22.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	3%	2%	2%	3%	4%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	405	496	123	24	330	164	56	386	38	190	12	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	405	496	123	24	330	164	56	424	0	190	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												



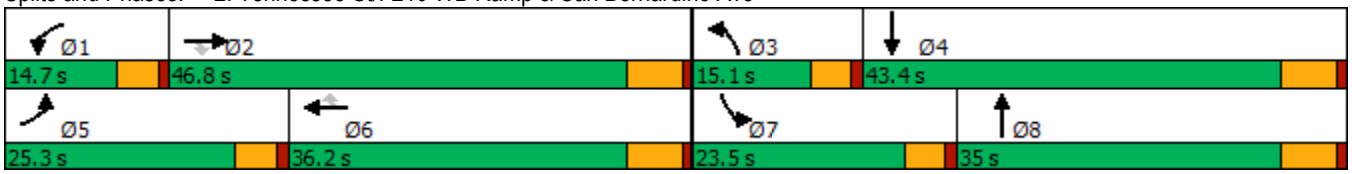
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	25.3	46.8	46.8	14.7	36.2	36.2	15.1	35.0		23.5	43.4	
Total Split (%)	21.1%	39.0%	39.0%	12.3%	30.2%	30.2%	12.6%	29.2%		19.6%	36.2%	
Maximum Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	29.0		18.8	37.4	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	18.4	41.9	41.9	10.3	23.7	23.7	10.5	18.4		16.4	28.4	
Actuated g/C Ratio	0.19	0.42	0.42	0.10	0.24	0.24	0.11	0.19		0.17	0.29	
v/c Ratio	0.76	0.66	0.17	0.15	0.79	0.32	0.34	0.68		0.73	0.25	
Control Delay	50.2	31.4	2.6	49.3	51.1	4.3	53.2	44.3		59.5	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.2	31.4	2.6	49.3	51.1	4.3	53.2	44.3		59.5	8.9	
LOS	D	C	A	D	D	A	D	D		E	A	
Approach Delay		35.3			36.2			45.4			39.4	
Approach LOS		D			D			D			D	
90th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	25.6		18.8	34.0	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
70th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	21.2		18.8	29.6	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	20.6	50.3	50.3	0.0	25.0	25.0	10.0	18.8		18.8	27.6	
50th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Min	Gap		Max	Hold	
30th %ile Green (s)	17.1	42.4	42.4	0.0	20.6	20.6	10.0	15.7		15.2	20.9	
30th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Min	Gap		Gap	Hold	
10th %ile Green (s)	12.9	32.1	32.1	0.0	14.5	14.5	0.0	11.8		10.8	27.3	
10th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	348	369	6	22	284	10	48	358		159	22	
Fuel Used(gal)	8	8	1	1	9	1	2	14		5	1	
CO Emissions (g/hr)	569	546	53	44	597	77	140	1007		317	90	
NOx Emissions (g/hr)	111	106	10	9	116	15	27	196		62	17	
VOC Emissions (g/hr)	132	127	12	10	138	18	32	233		74	21	
Dilemma Vehicles (#)	0	0	0	0	14	0	0	15		0	0	
Queue Length 50th (ft)	131	232	0	15	208	0	36	138		120	6	
Queue Length 95th (ft)	#221	#503	24	45	334	32	84	202		#247	52	
Internal Link Dist (ft)		640			195			1304			916	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	621	789	750	165	550	603	170	1006		307	642	

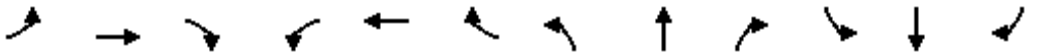
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.65	0.63	0.16	0.15	0.60	0.27	0.33	0.42		0.62	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 99			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 38.1		Intersection LOS: D	
Intersection Capacity Utilization 76.4%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 116.6			
70th %ile Actuated Cycle: 112.2			
50th %ile Actuated Cycle: 104.6			
30th %ile Actuated Cycle: 90			
10th %ile Actuated Cycle: 71.4			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	481	119	23	320	159	54	374	37	184	12	110
Future Volume (veh/h)	393	481	119	23	320	159	54	374	37	184	12	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1758	1673	1758	1758	1660	1772	1772	1660	1744	1716
Adj Flow Rate, veh/h	405	496	123	24	330	164	56	386	38	190	12	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	3	2	3	3	3	2	2	3	4	6
Cap, veh/h	502	621	522	83	404	343	144	538	53	228	33	308
Arrive On Green	0.17	0.35	0.35	0.05	0.23	0.23	0.09	0.17	0.17	0.14	0.23	0.23
Sat Flow, veh/h	2910	1772	1490	1594	1758	1490	1581	3097	303	1581	144	1356
Grp Volume(v), veh/h	405	496	123	24	330	164	56	209	215	190	0	125
Grp Sat Flow(s),veh/h/ln	1455	1772	1490	1594	1758	1490	1581	1683	1717	1581	0	1500
Q Serve(g_s), s	10.2	19.3	4.5	1.1	13.6	7.3	2.6	9.0	9.1	9.0	0.0	5.4
Cycle Q Clear(g_c), s	10.2	19.3	4.5	1.1	13.6	7.3	2.6	9.0	9.1	9.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.90
Lane Grp Cap(c), veh/h	502	621	522	83	404	343	144	292	298	228	0	341
V/C Ratio(X)	0.81	0.80	0.24	0.29	0.82	0.48	0.39	0.71	0.72	0.83	0.00	0.37
Avail Cap(c_a), veh/h	783	944	794	208	693	587	215	637	650	388	0	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.5	22.4	17.6	34.9	28.0	25.5	32.8	29.9	29.9	31.9	0.0	25.0
Incr Delay (d2), s/veh	3.5	2.9	0.2	1.9	4.1	1.0	1.7	3.3	3.3	7.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	8.0	1.5	0.4	5.7	2.5	1.0	3.7	3.8	3.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	25.3	17.8	36.8	32.0	26.6	34.5	33.1	33.2	39.5	0.0	25.6
LnGrp LOS	C	C	B	D	C	C	C	C	C	D	A	C
Approach Vol, veh/h		1024			518			480			315	
Approach Delay, s/veh		27.8			30.5			33.3			34.0	
Approach LOS		C			C			C			C	

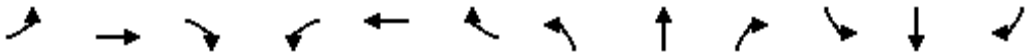
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	32.8	11.7	23.4	17.9	23.6	15.8	19.3
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 10	40.8	* 10	37.4	* 21	30.2	* 19	29.0
Max Q Clear Time (g_c+I1), s	3.1	21.3	4.6	7.4	12.2	15.6	11.0	11.1
Green Ext Time (p_c), s	0.0	3.5	0.0	0.8	1.0	2.0	0.3	2.2

Intersection Summary	
HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	740	404	116	426	107	301	299	206	73	75	6
Future Volume (vph)	59	740	404	116	426	107	301	299	206	73	75	6
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		1.00				0.99			0.98
Frt			0.850		0.970				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1703	0	1583	1765	1471	1583	1748	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1470	1583	1703	0	1583	1765	1449	1583	1748	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			319		15				212			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1312	
Travel Time (s)		5.9			8.2			12.9			25.6	
Confl. Peds. (#/hr)			8			3			3			3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	61	763	416	120	439	110	310	308	212	75	77	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	763	416	120	549	0	310	308	212	75	77	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

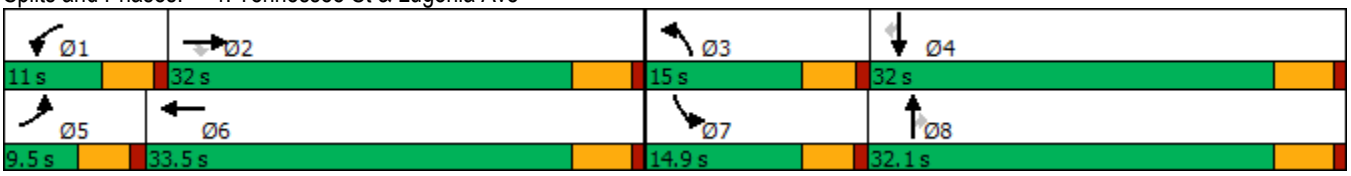


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.5	32.0	32.0	11.0	33.5		15.0	32.1	32.1	14.9	32.0	32.0
Total Split (%)	10.6%	35.6%	35.6%	12.2%	37.2%		16.7%	35.7%	35.7%	16.6%	35.6%	35.6%
Maximum Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		8	8		3			3	3		3	3
Act Effct Green (s)	5.3	24.5	24.5	6.9	29.3		11.2	19.0	19.0	8.7	16.6	16.6
Actuated g/C Ratio	0.07	0.32	0.32	0.09	0.39		0.15	0.25	0.25	0.11	0.22	0.22
v/c Ratio	0.55	0.71	0.60	0.83	0.82		1.33	0.70	0.41	0.41	0.20	0.01
Control Delay	60.6	28.3	10.7	84.4	38.0		209.1	36.6	6.4	42.9	26.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	28.3	10.7	84.4	38.0		209.1	36.6	6.4	42.9	26.0	0.0
LOS	E	C	B	F	D		F	D	A	D	C	A
Approach Delay		24.0			46.3			93.3			33.0	
Approach LOS		C			D			F			C	
90th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
90th %ile Term Code	Max	Max	Max	Max	Max		Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	23.6	23.6	10.4	23.5	23.5
70th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	20.1	20.1	9.2	18.8	18.8
50th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
30th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	15.8	15.8	7.6	12.9	12.9
30th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
10th %ile Green (s)	0.0	14.3	14.3	6.5	25.3		10.5	10.0	10.0	0.0	0.0	0.0
10th %ile Term Code	Skip	Gap	Gap	Max	Hold		Max	Gap	Gap	Skip	Skip	Skip
Stops (vph)	50	610	99	83	394		196	252	25	65	56	0
Fuel Used(gal)	2	15	4	4	11		18	7	3	3	2	0
CO Emissions (g/hr)	109	1019	294	249	799		1223	512	186	178	159	8
NOx Emissions (g/hr)	21	198	57	48	156		238	100	36	35	31	2
VOC Emissions (g/hr)	25	236	68	58	185		284	119	43	41	37	2
Dilemma Vehicles (#)	0	44	0	0	30		0	15	0	0	3	0
Queue Length 50th (ft)	31	176	35	62	258		~225	144	0	36	32	0
Queue Length 95th (ft)	#100	274	137	#184	#523		#420	233	49	84	65	0
Internal Link Dist (ft)		269			341			583			1232	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	110	1269	755	144	689		233	670	682	230	661	636

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.60	0.55	0.83	0.80		1.33	0.46	0.31	0.33	0.12	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 75.9			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.33			
Intersection Signal Delay: 49.5		Intersection LOS: D	
Intersection Capacity Utilization 75.1%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 86.5			
50th %ile Actuated Cycle: 81.8			
30th %ile Actuated Cycle: 75.9			
10th %ile Actuated Cycle: 45.3			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: Tennessee St & Lugonia Ave

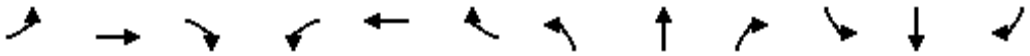


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	740	404	116	426	107	301	299	206	73	75	6
Future Volume (veh/h)	59	740	404	116	426	107	301	299	206	73	75	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1744	1673	1758	1772
Adj Flow Rate, veh/h	61	763	416	120	439	110	310	308	212	75	77	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	4	2	3	2
Cap, veh/h	80	1155	511	148	527	132	242	410	340	93	242	204
Arrive On Green	0.05	0.34	0.34	0.09	0.39	0.39	0.15	0.23	0.23	0.06	0.14	0.14
Sat Flow, veh/h	1594	3367	1491	1594	1366	342	1594	1772	1472	1594	1758	1485
Grp Volume(v), veh/h	61	763	416	120	0	549	310	308	212	75	77	6
Grp Sat Flow(s),veh/h/ln	1594	1683	1491	1594	0	1709	1594	1772	1472	1594	1758	1485
Q Serve(g_s), s	2.6	13.3	17.6	5.1	0.0	20.1	10.5	11.2	8.9	3.2	2.7	0.2
Cycle Q Clear(g_c), s	2.6	13.3	17.6	5.1	0.0	20.1	10.5	11.2	8.9	3.2	2.7	0.2
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	1155	511	148	0	659	242	410	340	93	242	204
V/C Ratio(X)	0.77	0.66	0.81	0.81	0.00	0.83	1.28	0.75	0.62	0.81	0.32	0.03
Avail Cap(c_a), veh/h	115	1316	583	150	0	705	242	695	577	240	687	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	19.3	20.7	30.8	0.0	19.2	29.3	24.7	23.8	32.2	26.9	25.8
Incr Delay (d2), s/veh	16.7	1.0	7.7	27.5	0.0	8.1	153.7	2.8	1.9	15.1	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.7	6.6	3.0	0.0	8.5	14.1	4.7	3.1	1.6	1.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	20.3	28.4	58.3	0.0	27.3	183.0	27.5	25.7	47.3	27.6	25.9
LnGrp LOS	D	C	C	E	A	C	F	C	C	D	C	C
Approach Vol, veh/h		1240			669			830			158	
Approach Delay, s/veh		24.5			32.8			85.1			36.9	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	28.7	15.0	14.5	7.9	31.6	8.5	21.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	6.5	27.0	10.5	27.0	5.0	28.5	10.4	27.1
Max Q Clear Time (g_c+I1), s	7.1	19.6	12.5	4.7	4.6	22.1	5.2	13.2
Green Ext Time (p_c), s	0.0	3.8	0.0	0.3	0.0	1.9	0.1	2.1

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	119	3	214	223	680	0	0	518	105
Future Volume (vph)	0	0	0	119	3	214	223	680	0	0	518	105
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.904						0.975	
Flt Protected					0.983		0.950					
Satd. Flow (prot)	0	0	0	0	2959	0	1568	3353	0	0	3269	0
Flt Permitted					0.983		0.950					
Satd. Flow (perm)	0	0	0	0	2959	0	1568	3353	0	0	3269	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					225						29	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1063			612			817	
Travel Time (s)		19.4			24.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	125	3	225	235	716	0	0	545	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	353	0	235	716	0	0	656	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (ft)				20	100		20	100			100	
Trailing Detector (ft)				0	0		0	0			0	
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4								
Detector Phase				4	4		1	6			2	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				24.0	24.0		30.0	66.0			36.0	
Total Split (%)				26.7%	26.7%		33.3%	73.3%			40.0%	
Maximum Green (s)				18.5	18.5		25.0	60.5			30.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								1				
Act Effct Green (s)					9.9		18.6	69.1			45.5	
Actuated g/C Ratio					0.11		0.21	0.77			0.51	
v/c Ratio					0.67		0.73	0.28			0.39	
Control Delay					20.4		43.9	0.9			15.7	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					20.4		43.9	0.9			15.7	
LOS					C		D	A			B	
Approach Delay					20.4			11.5			15.7	
Approach LOS					C			B			B	
90th %ile Green (s)				15.3	15.3		25.3	63.7			33.4	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				11.5	11.5		21.5	67.5			41.0	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				9.5	9.5		18.7	69.5			45.8	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				7.6	7.6		15.8	71.4			50.6	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				5.5	5.5		11.7	73.5			56.8	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					119		176	50			367	
Fuel Used(gal)					5		4	4			11	
CO Emissions (g/hr)					337		301	245			797	
NOx Emissions (g/hr)					66		59	48			155	
VOC Emissions (g/hr)					78		70	57			185	
Dilemma Vehicles (#)					0		0	19			35	
Queue Length 50th (ft)					36		119	12			108	
Queue Length 95th (ft)					74		m90	m3			197	
Internal Link Dist (ft)		775			983			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					786		436	2575			1667	

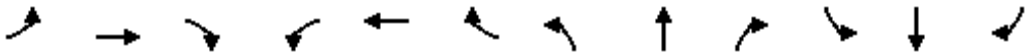
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.45		0.54	0.28			0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 49 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 81.4%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Tennessee St & I-10 WB Ramps

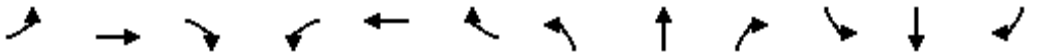




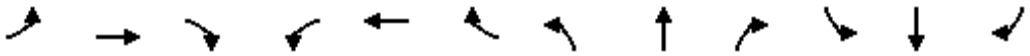
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	119	3	214	223	680	0	0	518	105
Future Volume (veh/h)	0	0	0	119	3	214	223	680	0	0	518	105
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1744	1772	1772	1660	1772	0	0	1772	1772
Adj Flow Rate, veh/h				125	3	225	235	716	0	0	545	111
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				4	2	2	3	2	0	0	2	2
Cap, veh/h				289	7	263	265	2365	0	0	1336	271
Arrive On Green				0.18	0.18	0.18	0.34	1.00	0.00	0.00	0.48	0.48
Sat Flow, veh/h				1650	40	1502	1581	3455	0	0	2876	566
Grp Volume(v), veh/h				128	0	225	235	716	0	0	328	328
Grp Sat Flow(s),veh/h/ln				1689	0	1502	1581	1683	0	0	1683	1670
Q Serve(g_s), s				6.1	0.0	13.1	12.7	0.0	0.0	0.0	11.4	11.4
Cycle Q Clear(g_c), s				6.1	0.0	13.1	12.7	0.0	0.0	0.0	11.4	11.4
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.34
Lane Grp Cap(c), veh/h				296	0	263	265	2365	0	0	807	801
V/C Ratio(X)				0.43	0.00	0.86	0.89	0.30	0.00	0.00	0.41	0.41
Avail Cap(c_a), veh/h				347	0	309	439	2365	0	0	807	801
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.55	0.55	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.1	0.0	36.0	29.1	0.0	0.0	0.0	15.2	15.2
Incr Delay (d2), s/veh				1.0	0.0	18.2	7.0	0.2	0.0	0.0	1.5	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	6.0	4.3	0.1	0.0	0.0	4.4	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				34.1	0.0	54.2	36.1	0.2	0.0	0.0	16.7	16.7
LnGrp LOS				C	A	D	D	A	A	A	B	B
Approach Vol, veh/h					353			951			656	
Approach Delay, s/veh					46.9			9.1			16.7	
Approach LOS					D			A			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.1	48.6		21.3		68.7						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	25.0	30.5		18.5		60.5						
Max Q Clear Time (g_c+I1), s	14.7	13.4		15.1		2.0						
Green Ext Time (p_c), s	0.5	3.7		0.7		5.7						

Intersection Summary		
HCM 6th Ctrl Delay		18.4
HCM 6th LOS		B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	283	348	354	0	0	0	0	620	149	228	409	0
Future Volume (vph)	283	348	354	0	0	0	0	620	149	228	409	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.946						0.971				
Flt Protected		0.986								0.950		
Satd. Flow (prot)	0	3119	0	0	0	0	0	3256	0	1583	3320	0
Flt Permitted		0.986								0.950		
Satd. Flow (perm)	0	3119	0	0	0	0	0	3256	0	1583	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		128						34				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	298	366	373	0	0	0	0	653	157	240	431	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1037	0	0	0	0	0	810	0	240	431	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

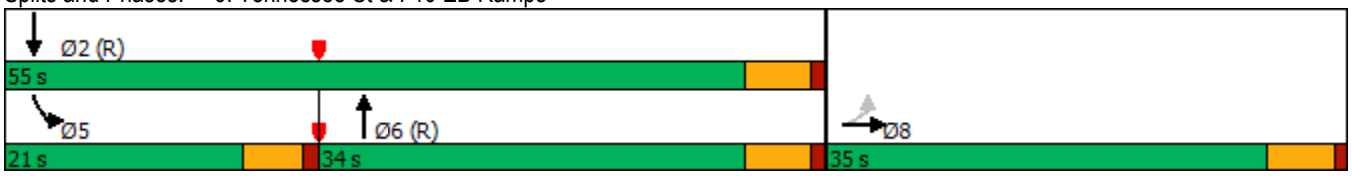


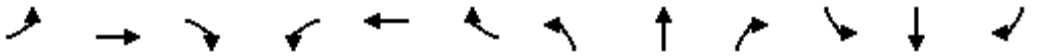
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	35.0	35.0						34.0		21.0	55.0	
Total Split (%)	38.9%	38.9%						37.8%		23.3%	61.1%	
Maximum Green (s)	29.5	29.5						28.5		16.0	49.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		30.1						28.4		15.5	48.9	
Actuated g/C Ratio		0.33						0.32		0.17	0.54	
v/c Ratio		0.92						0.77		0.88	0.24	
Control Delay		39.7						32.6		59.6	16.1	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		39.7						32.6		59.6	16.1	
LOS		D						C		E	B	
Approach Delay		39.7						32.6			31.7	
Approach LOS		D						C			C	
90th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
90th %ile Term Code	Max	Max						Coord		Max	Coord	
70th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
70th %ile Term Code	Max	Max						Coord		Max	Coord	
50th %ile Green (s)	30.0	30.0						28.0		16.0	49.0	
50th %ile Term Code	Max	Max						Coord		Max	Coord	
30th %ile Green (s)	32.3	32.3						25.7		16.0	46.7	
30th %ile Term Code	Max	Max						Coord		Max	Coord	
10th %ile Green (s)	29.0	29.0						31.5		13.5	50.0	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		772						652		202	304	
Fuel Used(gal)		22						13		5	5	
CO Emissions (g/hr)		1507						927		370	380	
NOx Emissions (g/hr)		293						180		72	74	
VOC Emissions (g/hr)		349						215		86	88	
Dilemma Vehicles (#)		0						43		0	24	
Queue Length 50th (ft)		264						210		142	111	
Queue Length 95th (ft)		#401						280		#267	78	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1130						1075		281	1830	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.92						0.75		0.85	0.24	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 87.5 (97%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 35.3		Intersection LOS: D	
Intersection Capacity Utilization 81.4%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Tennessee St & I-10 EB Ramps

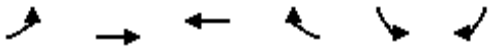




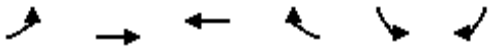
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	348	354	0	0	0	0	620	149	228	409	0
Future Volume (veh/h)	283	348	354	0	0	0	0	620	149	228	409	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1772	1772				0	1772	1772	1673	1758	0
Adj Flow Rate, veh/h	298	366	373				0	653	157	240	431	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2				0	2	2	2	3	0
Cap, veh/h	295	372	406				0	869	209	274	1837	0
Arrive On Green	0.33	0.33	0.33				0.00	0.32	0.32	0.06	0.18	0.00
Sat Flow, veh/h	901	1135	1239				0	2781	647	1594	3428	0
Grp Volume(v), veh/h	571	0	466				0	408	402	240	431	0
Grp Sat Flow(s),veh/h/ln	1727	0	1549				0	1683	1656	1594	1670	0
Q Serve(g_s), s	29.5	0.0	26.0				0.0	19.5	19.5	13.5	9.9	0.0
Cycle Q Clear(g_c), s	29.5	0.0	26.0				0.0	19.5	19.5	13.5	9.9	0.0
Prop In Lane	0.52		0.80				0.00		0.39	1.00		0.00
Lane Grp Cap(c), veh/h	566	0	508				0	543	534	274	1837	0
V/C Ratio(X)	1.01	0.00	0.92				0.00	0.75	0.75	0.88	0.23	0.00
Avail Cap(c_a), veh/h	566	0	508				0	543	534	283	1837	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.93	0.93	0.00
Uniform Delay (d), s/veh	30.3	0.0	29.1				0.0	27.2	27.3	41.5	20.6	0.0
Incr Delay (d2), s/veh	40.0	0.0	21.8				0.0	9.2	9.4	23.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.0	0.0	12.3				0.0	8.8	8.7	7.5	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.2	0.0	50.9				0.0	36.5	36.7	64.8	20.9	0.0
LnGrp LOS	F	A	D				A	D	D	E	C	A
Approach Vol, veh/h		1037						810			671	
Approach Delay, s/veh		61.5						36.6			36.6	
Approach LOS		E						D			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		55.0			20.5	34.5		35.0				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		49.5			16.0	28.5		29.5				
Max Q Clear Time (g_c+I1), s		11.9			15.5	21.5		31.5				
Green Ext Time (p_c), s		3.0			0.0	2.8		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			46.9									
HCM 6th LOS			D									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	62	714	444	289	489	129
Future Volume (vph)	62	714	444	289	489	129
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.941			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3353	3155	0	2891	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3353	3155	0	2891	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			301			134
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	65	744	463	301	509	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	744	764	0	509	134
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



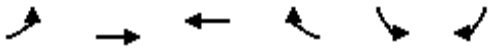
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	42.0	33.0		18.0	18.0
Total Split (%)	15.0%	70.0%	55.0%		30.0%	30.0%
Maximum Green (s)	4.2	35.7	26.7		13.2	13.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)			7.0			
Flash Dont Walk (s)			19.0			
Pedestrian Calls (#/hr)			6			
Act Effct Green (s)	4.5	20.2	15.6		12.0	12.0
Actuated g/C Ratio	0.10	0.46	0.35		0.27	0.27
v/c Ratio	0.40	0.48	0.58		0.65	0.26
Control Delay	34.3	8.8	9.2		21.8	5.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	34.3	8.8	9.2		21.8	5.9
LOS	C	A	A		C	A
Approach Delay		10.9	9.2		18.5	
Approach LOS		B	A		B	
90th %ile Green (s)	4.2	35.0	26.0		13.2	13.2
90th %ile Term Code	Max	Hold	Ped		Max	Max
70th %ile Green (s)	4.2	25.5	16.5		13.2	13.2
70th %ile Term Code	Max	Hold	Gap		Max	Max
50th %ile Green (s)	4.2	23.4	14.4		13.2	13.2
50th %ile Term Code	Max	Hold	Gap		Max	Max
30th %ile Green (s)	0.0	12.7	12.7		10.5	10.5
30th %ile Term Code	Skip	Gap	Hold		Gap	Gap
10th %ile Green (s)	0.0	9.6	9.6		8.6	8.6
10th %ile Term Code	Skip	Gap	Hold		Gap	Gap
Stops (vph)	52	408	321		379	25
Fuel Used(gal)	2	18	9		14	3
CO Emissions (g/hr)	141	1235	615		1002	196
NOx Emissions (g/hr)	27	240	120		195	38
VOC Emissions (g/hr)	33	286	143		232	45
Dilemma Vehicles (#)	0	61	67		0	0
Queue Length 50th (ft)	18	64	54		62	0
Queue Length 95th (ft)	#73	93	93		#157	36
Internal Link Dist (ft)		2474	430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	161	2727	2148		925	571

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.40	0.27	0.36		0.55	0.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.1			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 12.5		Intersection LOS: B	
Intersection Capacity Utilization 56.4%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 59.3			
70th %ile Actuated Cycle: 49.8			
50th %ile Actuated Cycle: 47.7			
30th %ile Actuated Cycle: 34.3			
10th %ile Actuated Cycle: 29.3			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	714	444	289	489	129
Future Volume (veh/h)	62	714	444	289	489	129
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1575	1772
Adj Flow Rate, veh/h	65	744	462	301	509	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	75	1707	681	442	679	351
Arrive On Green	0.05	0.51	0.35	0.35	0.23	0.23
Sat Flow, veh/h	1594	3455	2046	1269	2910	1502
Grp Volume(v), veh/h	65	744	397	366	509	134
Grp Sat Flow(s),veh/h/ln	1594	1683	1683	1544	1455	1502
Q Serve(g_s), s	1.7	6.0	8.6	8.7	7.0	3.2
Cycle Q Clear(g_c), s	1.7	6.0	8.6	8.7	7.0	3.2
Prop In Lane	1.00			0.82	1.00	1.00
Lane Grp Cap(c), veh/h	75	1707	586	537	679	351
V/C Ratio(X)	0.87	0.44	0.68	0.68	0.75	0.38
Avail Cap(c_a), veh/h	156	2808	1050	963	898	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	6.7	11.9	11.9	15.2	13.8
Incr Delay (d2), s/veh	24.2	0.2	1.4	1.5	2.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.2	2.5	2.4	2.1	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.4	6.8	13.3	13.5	17.7	14.5
LnGrp LOS	D	A	B	B	B	B
Approach Vol, veh/h		809	763		643	
Approach Delay, s/veh		9.9	13.4		17.1	
Approach LOS		A	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.0		14.8	6.8	21.2
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 36		* 13	* 4.2	* 27
Max Q Clear Time (g_c+I1), s		8.0		9.0	3.7	10.7
Green Ext Time (p_c), s		5.2		1.0	0.0	4.2

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	952	162	40	503	169	57
Future Volume (vph)	952	162	40	503	169	57
Ideal Flow (vphpl)	1800	1800	1700	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			50		50	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97				
Frt		0.850			0.966	
Flt Protected			0.950		0.964	
Satd. Flow (prot)	3353	1485	1568	1765	1643	0
Flt Permitted			0.950		0.964	
Satd. Flow (perm)	3353	1448	1568	1765	1643	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		178			20	
Link Speed (mph)	35			35	40	
Link Distance (ft)	710			320	976	
Travel Time (s)	13.8			6.2	16.6	
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1046	178	44	553	186	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1046	178	44	553	249	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.15	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Detector Phase	2	2	1	6	4	
Switch Phase						



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	15.0	15.0	10.0	15.0	15.0	
Minimum Split (s)	23.3	23.3	15.0	23.3	23.0	
Total Split (s)	41.0	41.0	15.0	56.0	24.0	
Total Split (%)	51.3%	51.3%	18.8%	70.0%	30.0%	
Maximum Green (s)	35.7	35.7	10.0	50.7	19.0	
Yellow Time (s)	4.3	4.3	4.0	4.3	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.3	5.3	5.0	5.3	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min	None	Min	None	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	8.0	8.0				
Pedestrian Calls (#/hr)	2	2				
Act Effct Green (s)	27.9	27.9	10.8	35.3	17.5	
Actuated g/C Ratio	0.44	0.44	0.17	0.55	0.27	
v/c Ratio	0.72	0.24	0.17	0.57	0.54	
Control Delay	18.9	3.4	31.8	10.9	27.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.9	3.4	31.8	10.9	27.4	
LOS	B	A	C	B	C	
Approach Delay	16.7			12.5	27.4	
Approach LOS	B			B	C	
90th %ile Green (s)	35.7	35.7	10.0	50.7	19.0	
90th %ile Term Code	Max	Max	Max	Hold	Max	
70th %ile Green (s)	35.7	35.7	10.0	50.7	19.0	
70th %ile Term Code	Max	Max	Max	Hold	Max	
50th %ile Green (s)	31.3	31.3	10.0	46.3	15.4	
50th %ile Term Code	Gap	Gap	Max	Hold	Gap	
30th %ile Green (s)	20.2	20.2	0.0	20.2	15.0	
30th %ile Term Code	Gap	Gap	Skip	Hold	Min	
10th %ile Green (s)	17.3	17.3	0.0	17.3	15.0	
10th %ile Term Code	Dwell	Dwell	Skip	Dwell	Min	
Stops (vph)	709	17	35	270	170	
Fuel Used(gal)	17	2	1	4	4	
CO Emissions (g/hr)	1173	109	43	301	310	
NOx Emissions (g/hr)	228	21	8	59	60	
VOC Emissions (g/hr)	272	25	10	70	72	
Dilemma Vehicles (#)	67	0	0	30	0	
Queue Length 50th (ft)	193	0	18	110	94	
Queue Length 95th (ft)	283	33	50	202	178	
Internal Link Dist (ft)	630			240	896	
Turn Bay Length (ft)			100			
Base Capacity (vph)	2019	942	264	1402	540	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.19	0.17	0.39	0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 64			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 59.3%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 80			
70th %ile Actuated Cycle: 80			
50th %ile Actuated Cycle: 72			
30th %ile Actuated Cycle: 45.5			
10th %ile Actuated Cycle: 42.6			

Splits and Phases: 9: New York St & Lugonia Ave

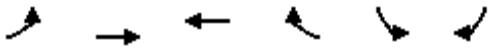




Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	952	162	40	503	169	57
Future Volume (veh/h)	952	162	40	503	169	57
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1772	1758	1660	1772	1772	1772
Adj Flow Rate, veh/h	1046	178	44	553	186	63
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	3	3	2	2	2
Cap, veh/h	1413	624	136	1042	296	100
Arrive On Green	0.42	0.42	0.09	0.59	0.24	0.24
Sat Flow, veh/h	3455	1486	1581	1772	1218	412
Grp Volume(v), veh/h	1046	178	44	553	250	0
Grp Sat Flow(s),veh/h/ln	1683	1486	1581	1772	1637	0
Q Serve(g_s), s	15.9	4.8	1.6	11.4	8.3	0.0
Cycle Q Clear(g_c), s	15.9	4.8	1.6	11.4	8.3	0.0
Prop In Lane		1.00	1.00		0.74	0.25
Lane Grp Cap(c), veh/h	1413	624	136	1042	397	0
V/C Ratio(X)	0.74	0.29	0.32	0.53	0.63	0.00
Avail Cap(c_a), veh/h	1975	872	260	1476	511	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.9	11.6	26.1	7.5	20.6	0.0
Incr Delay (d2), s/veh	0.9	0.2	1.4	0.4	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	1.4	0.6	3.2	3.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.8	11.9	27.5	7.9	22.2	0.0
LnGrp LOS	B	B	C	A	C	A
Approach Vol, veh/h	1224			597	250	
Approach Delay, s/veh	15.3			9.4	22.2	
Approach LOS	B			A	C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	30.8		19.8		41.1
Change Period (Y+Rc), s	5.0	5.3		5.0		5.3
Max Green Setting (Gmax), s	10.0	35.7		19.0		50.7
Max Q Clear Time (g_c+I1), s	3.6	17.9		10.3		13.4
Green Ext Time (p_c), s	0.0	7.6		0.5		3.9

Intersection Summary	
HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	82	927	517	8	3	26
Future Volume (vph)	82	927	517	8	3	26
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.878	
Flt Protected	0.950				0.995	
Satd. Flow (prot)	1583	3353	1761	0	1542	0
Flt Permitted	0.950				0.995	
Satd. Flow (perm)	1583	3353	1761	0	1542	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	88	997	556	9	3	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	997	565	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	82	927	517	8	3	26
Future Vol, veh/h	82	927	517	8	3	26
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	997	556	9	3	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	566	0	-	0	1237	562
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	675	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1004	-	-	-	181	526
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1003	-	-	-	165	525
Mov Cap-2 Maneuver	-	-	-	-	165	-
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1003	-	-	-	428
HCM Lane V/C Ratio	0.088	-	-	-	0.073
HCM Control Delay (s)	8.9	-	-	-	14.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	21	0	2	0	14	52	2	7	0
Future Volume (vph)	0	0	0	21	0	2	0	14	52	2	7	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.986			0.893				
Flt Protected					0.957						0.988	
Satd. Flow (prot)	0	1765	0	0	1682	0	0	1591	0	0	1761	0
Flt Permitted					0.957						0.988	
Satd. Flow (perm)	0	1765	0	0	1682	0	0	1591	0	0	1761	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		338			965			1320			300	
Travel Time (s)		7.7			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	1%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	27	0	3	0	18	68	3	9	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	30	0	0	86	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	21	0	2	0	14	52	2	7	0
Future Vol, veh/h	0	0	0	21	0	2	0	14	52	2	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	1	2	1	2	1	1	1	1	2
Mvmt Flow	0	0	0	27	0	3	0	18	68	3	9	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	1	0	0	-	58	1	100	57	-
Stage 1	-	-	-	-	-	-	-	1	-	56	56	-
Stage 2	-	-	-	-	-	-	-	57	-	44	1	-
Critical Hdwy	4.12	-	-	4.11	-	-	-	6.51	6.21	7.11	6.51	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	-	4.009	3.309	3.509	4.009	-
Pot Cap-1 Maneuver	1619	-	-	1628	-	-	0	835	1087	884	836	0
Stage 1	-	-	-	-	-	-	0	897	-	959	850	0
Stage 2	-	-	-	-	-	-	0	849	-	973	897	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1619	-	-	1628	-	-	-	821	1087	804	822	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	821	-	804	822	-
Stage 1	-	-	-	-	-	-	-	897	-	959	836	-
Stage 2	-	-	-	-	-	-	-	835	-	894	897	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	6.6	8.9	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1017	1619	-	-	1628	-	-	818
HCM Lane V/C Ratio	0.084	-	-	-	0.017	-	-	0.014
HCM Control Delay (s)	8.9	0	-	-	7.2	0	-	9.5
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	39	11	68	16	24	7	265	89	26	183	16
Future Volume (vph)	16	39	11	68	16	24	7	265	89	26	183	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977			0.970			0.967			0.990	
Flt Protected		0.988			0.969			0.999			0.994	
Satd. Flow (prot)	0	1689	0	0	1675	0	0	1720	0	0	1754	0
Flt Permitted		0.988			0.969			0.999			0.994	
Satd. Flow (perm)	0	1689	0	0	1675	0	0	1720	0	0	1754	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	5%	1%	1%	1%	6%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	17	41	12	72	17	25	7	279	94	27	193	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	70	0	0	114	0	0	380	0	0	237	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

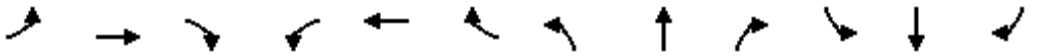
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

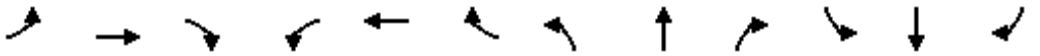
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	39	11	68	16	24	7	265	89	26	183	16
Future Vol, veh/h	16	39	11	68	16	24	7	265	89	26	183	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	3	5	1	1	1	6	1	1	1	1	1
Mvmt Flow	17	41	12	72	17	25	7	279	94	27	193	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	9.7	12.1	10.2
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	24%	63%	12%
Vol Thru, %	73%	59%	15%	81%
Vol Right, %	25%	17%	22%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	361	66	108	225
LT Vol	7	16	68	26
Through Vol	265	39	16	183
RT Vol	89	11	24	16
Lane Flow Rate	380	69	114	237
Geometry Grp	1	1	1	1
Degree of Util (X)	0.489	0.107	0.175	0.318
Departure Headway (Hd)	4.632	5.567	5.527	4.829
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	647	653	737
Service Time	2.707	3.573	3.527	2.913
HCM Lane V/C Ratio	0.493	0.107	0.175	0.322
HCM Control Delay	12.1	9.2	9.7	10.2
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	2.7	0.4	0.6	1.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	769	93	86	385	12	105	259	143	18	222	33
Future Volume (vph)	68	769	93	86	385	12	105	259	143	18	222	33
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.995				0.850			0.850
Flt Protected	0.950			0.950				0.986			0.996	
Satd. Flow (prot)	1599	3332	0	1583	3337	0	0	1757	1515	0	1775	1515
Flt Permitted	0.950			0.950				0.781			0.959	
Satd. Flow (perm)	1599	3332	0	1583	3337	0	0	1392	1515	0	1709	1515
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4				78			78
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		425			524			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	72	809	98	91	405	13	111	273	151	19	234	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	907	0	91	418	0	0	384	151	0	253	35
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												



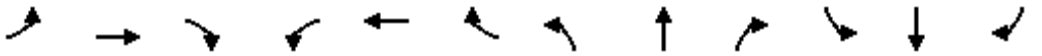
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	14.7	37.0		14.0	36.3		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	16.3%	41.1%		15.6%	40.3%		43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.7	4.7		4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	8.7	26.2		8.9	26.1			26.1	26.1		26.1	26.1
Actuated g/C Ratio	0.12	0.36		0.12	0.36			0.36	0.36		0.36	0.36
v/c Ratio	0.38	0.75		0.47	0.35			0.77	0.25		0.41	0.06
Control Delay	41.8	26.5		45.3	20.0			34.4	11.3		21.9	0.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	41.8	26.5		45.3	20.0			34.4	11.3		21.9	0.7
LOS	D	C		D	B			C	B		C	A
Approach Delay		27.6			24.5			27.9			19.3	
Approach LOS		C			C			C			B	
90th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
90th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
70th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
50th %ile Green (s)	9.1	28.9		9.3	29.1		29.0	29.0	29.0	29.0	29.0	29.0
50th %ile Term Code	Gap	Gap		Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	7.4	22.8		8.1	23.5		21.7	21.7	21.7	21.7	21.7	21.7
30th %ile Term Code	Gap	Gap		Gap	Hold		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	0.0	13.6		0.0	13.6		12.4	12.4	12.4	12.4	12.4	12.4
10th %ile Term Code	Skip	Gap		Skip	Hold		Gap	Gap	Gap	Hold	Hold	Hold
Stops (vph)	60	691		75	262			298	48		163	1
Fuel Used(gal)	2	16		2	5			7	1		5	0
CO Emissions (g/hr)	105	1112		118	356			500	102		338	22
NOx Emissions (g/hr)	21	216		23	69			97	20		66	4
VOC Emissions (g/hr)	24	258		27	82			116	24		78	5
Dilemma Vehicles (#)	0	51		0	19			21	0		12	0
Queue Length 50th (ft)	35	207		44	80			171	25		96	0
Queue Length 95th (ft)	81	304		#107	130			294	68		166	3
Internal Link Dist (ft)		345			444			591			1254	
Turn Bay Length (ft)	105			100					50			50
Base Capacity (vph)	248	1681		228	1642			742	844		911	844

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.29	0.54		0.40	0.25			0.52	0.18		0.28	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 72.7			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 25.9		Intersection LOS: C	
Intersection Capacity Utilization 80.5%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 90			
50th %ile Actuated Cycle: 81.3			
30th %ile Actuated Cycle: 66.7			
10th %ile Actuated Cycle: 35.4			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 13: Lugonia Ave & Texas St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	769	93	86	385	12	105	259	143	18	222	33
Future Volume (veh/h)	68	769	93	86	385	12	105	259	143	18	222	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1673	1772	1786	1786	1786	1786	1786	1786	1786
Adj Flow Rate, veh/h	72	809	98	91	405	13	111	273	151	19	234	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	1	1	1	1	1	1	1
Cap, veh/h	90	982	119	113	1124	36	58	98	651	49	407	651
Arrive On Green	0.06	0.32	0.32	0.07	0.34	0.34	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1606	3047	369	1594	3329	107	0	228	1514	0	946	1514
Grp Volume(v), veh/h	72	450	457	91	204	214	384	0	151	253	0	35
Grp Sat Flow(s),veh/h/ln	1606	1697	1720	1594	1683	1753	228	0	1514	946	0	1514
Q Serve(g_s), s	3.5	19.5	19.5	4.5	7.3	7.3	0.0	0.0	5.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s	3.5	19.5	19.5	4.5	7.3	7.3	34.3	0.0	5.0	34.3	0.0	1.1
Prop In Lane	1.00		0.21	1.00		0.06	0.29		1.00	0.08		1.00
Lane Grp Cap(c), veh/h	90	547	554	113	568	592	156	0	651	455	0	651
V/C Ratio(X)	0.80	0.82	0.82	0.80	0.36	0.36	2.46	0.00	0.23	0.56	0.00	0.05
Avail Cap(c_a), veh/h	201	687	696	186	667	694	156	0	651	455	0	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	24.9	24.9	36.5	19.9	19.9	20.0	0.0	14.4	17.3	0.0	13.3
Incr Delay (d2), s/veh	15.2	6.5	6.5	12.4	0.4	0.4	674.9	0.0	0.2	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	8.3	8.4	2.1	2.8	2.9	30.9	0.0	1.6	3.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	31.5	31.4	48.9	20.3	20.3	694.9	0.0	14.6	18.8	0.0	13.3
LnGrp LOS	D	C	C	D	C	C	F	A	B	B	A	B
Approach Vol, veh/h		979			509			535			288	
Approach Delay, s/veh		33.0			25.4			502.9			18.1	
Approach LOS		C			C			F			B	

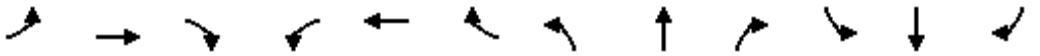
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	30.4		39.0	9.1	31.6		39.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 9.3	* 32		* 34	* 10	* 32		* 34				
Max Q Clear Time (g_c+I1), s	6.5	21.5		36.3	5.5	9.3		36.3				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	2.3		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	138.2
HCM 6th LOS	F

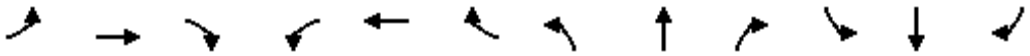
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix E:
Existing Year With Project (Scenario A) AM Peak Hour Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	273	44	65	314	244	29	4	35	195	175	150
Future Volume (vph)	59	273	44	65	314	244	29	4	35	195	175	150
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			256			113		167	
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		1161			720			1341			1495	
Travel Time (s)		26.4			16.4			26.1			34.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	7%	6%	2%	7%	3%	3%	17%	3%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	303	49	72	349	271	32	4	39	217	194	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	303	49	72	349	271	32	4	39	217	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

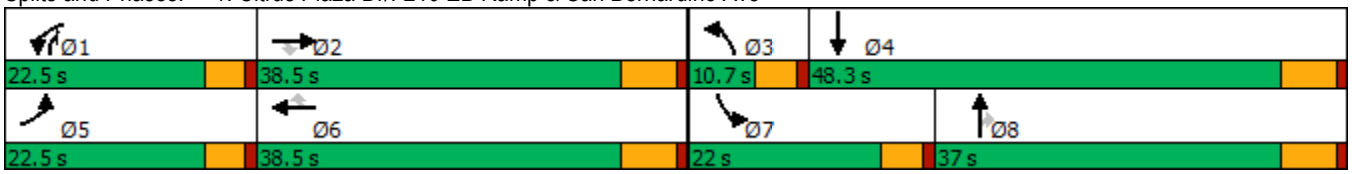


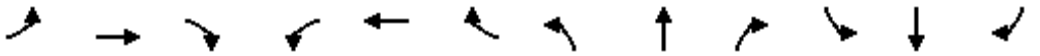
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.5	38.5	22.5	38.5	38.5	10.7	37.0	22.5	22.0	48.3	
Total Split (%)	18.8%	32.1%	32.1%	18.8%	32.1%	32.1%	8.9%	30.8%	18.8%	18.3%	40.3%	
Maximum Green (s)	17.8	32.5	32.5	17.8	32.5	32.5	6.0	31.0	17.8	17.3	42.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	8.9	20.4	20.4	9.2	20.6	20.6	6.5	6.4	10.9	18.6	15.6	
Actuated g/C Ratio	0.14	0.32	0.32	0.15	0.33	0.33	0.10	0.10	0.17	0.29	0.25	
v/c Ratio	0.30	0.29	0.09	0.31	0.64	0.41	0.20	0.03	0.11	0.47	0.41	
Control Delay	34.1	18.4	0.3	33.9	26.0	5.5	37.6	35.8	0.7	28.1	15.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.1	18.4	0.3	33.9	26.0	5.5	37.6	35.8	0.7	28.1	15.5	
LOS	C	B	A	C	C	A	D	D	A	C	B	
Approach Delay		18.8			18.8			18.3			20.2	
Approach LOS		B			B			B			C	
90th %ile Green (s)	12.3	32.1	32.1	12.7	32.5	32.5	6.0	6.5	12.7	17.3	17.8	
90th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Max	Gap	Gap	Max	Hold	
70th %ile Green (s)	10.0	24.9	24.9	10.3	25.2	25.2	6.0	0.0	10.3	24.3	12.3	
70th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Max	Skip	Gap	Hold	Gap	
50th %ile Green (s)	8.6	20.2	20.2	8.8	20.4	20.4	0.0	0.0	8.8	17.3	16.0	
50th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Max	Hold	
30th %ile Green (s)	7.2	16.1	16.1	7.4	16.3	16.3	0.0	0.0	7.4	16.7	15.4	
30th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Gap	Hold	
10th %ile Green (s)	0.0	10.5	10.5	0.0	10.5	10.5	0.0	0.0	0.0	12.8	11.5	
10th %ile Term Code	Skip	Hold	Hold	Skip	Gap	Gap	Skip	Skip	Skip	Gap	Hold	
Stops (vph)	51	180	0	56	242	32	29	7	0	145	140	
Fuel Used(gal)	1	4	0	1	5	2	1	0	1	4	6	
CO Emissions (g/hr)	86	314	28	79	333	127	69	11	47	293	390	
NOx Emissions (g/hr)	17	61	5	15	65	25	13	2	9	57	76	
VOC Emissions (g/hr)	20	73	6	18	77	30	16	3	11	68	90	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	23	43	0	25	108	4	11	1	0	67	30	
Queue Length 95th (ft)	74	95	0	78	247	56	47	13	0	#216	92	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	487	1829	892	496	962	959	165	839	581	511	2204	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.17	0.05	0.15	0.36	0.28	0.19	0.00	0.07	0.42	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 63.2			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 55.7%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 74.9			
50th %ile Actuated Cycle: 61.7			
30th %ile Actuated Cycle: 55.6			
10th %ile Actuated Cycle: 34			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	273	44	65	314	244	29	4	35	195	175	150
Future Volume (veh/h)	59	273	44	65	314	244	29	4	35	195	175	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1647	1702	1716	1673	1702	1758	1660	1561	1758	1673	1772	1744
Adj Flow Rate, veh/h	66	303	49	72	349	271	32	4	39	217	194	167
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	7	6	2	7	3	3	17	3	2	2	4
Cap, veh/h	138	891	401	141	469	411	55	138	263	272	394	321
Arrive On Green	0.09	0.28	0.28	0.09	0.28	0.28	0.03	0.09	0.09	0.17	0.22	0.22
Sat Flow, veh/h	1569	3233	1454	1594	1702	1490	1581	1561	1490	1594	1763	1434
Grp Volume(v), veh/h	66	303	49	72	349	271	32	4	39	217	185	176
Grp Sat Flow(s),veh/h/ln	1569	1617	1454	1594	1702	1490	1581	1561	1490	1594	1683	1514
Q Serve(g_s), s	2.3	4.2	1.4	2.4	10.6	9.1	1.1	0.1	1.3	7.4	5.4	5.8
Cycle Q Clear(g_c), s	2.3	4.2	1.4	2.4	10.6	9.1	1.1	0.1	1.3	7.4	5.4	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	138	891	401	141	469	411	55	138	263	272	377	339
V/C Ratio(X)	0.48	0.34	0.12	0.51	0.74	0.66	0.58	0.03	0.15	0.80	0.49	0.52
Avail Cap(c_a), veh/h	492	1853	833	500	975	854	167	854	946	486	1256	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	16.4	15.4	24.7	18.7	18.2	27.0	23.6	19.8	22.6	19.2	19.3
Incr Delay (d2), s/veh	2.5	0.2	0.1	2.9	2.4	1.8	9.3	0.1	0.3	5.3	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.5	0.4	1.0	4.0	3.0	0.5	0.0	0.4	3.0	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	16.6	15.5	27.6	21.1	20.0	36.2	23.7	20.0	27.9	20.2	20.6
LnGrp LOS	C	B	B	C	C	B	D	C	C	C	C	C
Approach Vol, veh/h		418			692			75			578	
Approach Delay, s/veh		18.2			21.3			27.1			23.2	
Approach LOS		B			C			C			C	

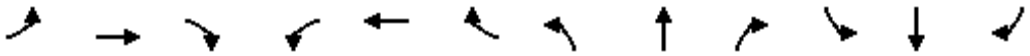
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	21.6	6.7	18.7	9.7	21.6	14.4	11.0
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 18	32.5	* 6	42.3	* 18	32.5	* 17	31.0
Max Q Clear Time (g_c+I1), s	4.4	6.2	3.1	7.8	4.3	12.6	9.4	3.3
Green Ext Time (p_c), s	0.1	2.2	0.0	2.4	0.1	3.0	0.4	0.1

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	288	103	47	506	274	34	277	51	126	17	83
Future Volume (vph)	112	288	103	47	506	274	34	277	51	126	17	83
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.977			0.876	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2730	1731	1471	1509	1748	1500	1553	3135	0	1538	1383	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2730	1731	1471	1509	1748	1500	1553	3135	0	1538	1383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			288		16			97	
Link Speed (mph)		30			45			35			30	
Link Distance (ft)		720			275			1384			978	
Travel Time (s)		16.4			4.2			27.0			22.2	
Confl. Peds. (#/hr)									1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	4%	4%	7%	3%	2%	4%	7%	3%	5%	9%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	130	335	120	55	588	319	40	322	59	147	20	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	335	120	55	588	319	40	381	0	147	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												

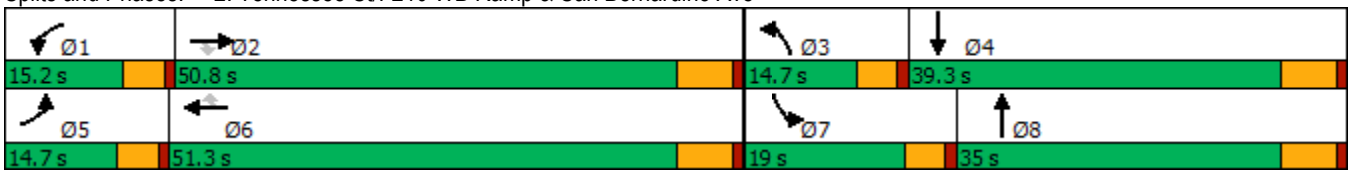


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	14.7	50.8	50.8	15.2	51.3	51.3	14.7	35.0		19.0	39.3	
Total Split (%)	12.3%	42.3%	42.3%	12.7%	42.8%	42.8%	12.3%	29.2%		15.8%	32.8%	
Maximum Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		1			0	
Act Effct Green (s)	10.2	43.3	43.3	10.4	39.8	39.8	10.2	18.4		13.4	28.5	
Actuated g/C Ratio	0.10	0.42	0.42	0.10	0.38	0.38	0.10	0.18		0.13	0.28	
v/c Ratio	0.49	0.46	0.18	0.37	0.88	0.42	0.26	0.67		0.74	0.26	
Control Delay	54.4	26.9	5.0	55.7	46.1	5.9	53.0	44.8		68.4	11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.4	26.9	5.0	55.7	46.1	5.9	53.0	44.8		68.4	11.6	
LOS	D	C	A	E	D	A	D	D		E	B	
Approach Delay		28.5			33.3			45.6			43.2	
Approach LOS		C			C			D			D	
90th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Ped		Max	Hold	
70th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	20.0		14.3	24.3	
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	10.0	44.3	44.3	10.0	44.3	44.3	10.0	17.8		14.3	22.1	
50th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Max	Gap		Max	Hold	
30th %ile Green (s)	10.0	37.5	37.5	10.0	37.5	37.5	0.0	15.5		14.1	34.3	
30th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Skip	Gap		Gap	Hold	
10th %ile Green (s)	10.0	42.3	42.3	0.0	27.6	27.6	0.0	11.7		10.1	26.5	
10th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	102	203	12	42	427	34	32	279		107	22	
Fuel Used(gal)	2	4	1	1	13	2	1	8		3	1	
CO Emissions (g/hr)	170	302	52	91	888	153	66	585		231	79	
NOx Emissions (g/hr)	33	59	10	18	173	30	13	114		45	15	
VOC Emissions (g/hr)	39	70	12	21	206	35	15	136		54	18	
Dilemma Vehicles (#)	0	0	0	0	21	0	0	12		0	0	
Queue Length 50th (ft)	44	166	0	36	354	13	26	127		99	11	
Queue Length 95th (ft)	80	275	34	81	#585	66	63	169		#207	52	
Internal Link Dist (ft)		640			195			1304			898	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	268	762	715	155	778	827	152	905		216	520	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.49	0.44	0.17	0.35	0.76	0.39	0.26	0.42		0.68	0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 103.6			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 35.5		Intersection LOS: D	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 120			
70th %ile Actuated Cycle: 111			
50th %ile Actuated Cycle: 107.8			
30th %ile Actuated Cycle: 98.5			
10th %ile Actuated Cycle: 80.8			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	288	103	47	506	274	34	277	51	126	17	83
Future Volume (veh/h)	112	288	103	47	506	274	34	277	51	126	17	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1500	1744	1744	1607	1758	1772	1647	1702	1758	1634	1674	1589
Adj Flow Rate, veh/h	130	335	120	55	588	319	40	322	59	147	20	97
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	4	4	7	3	2	4	7	3	5	9	15
Cap, veh/h	297	705	598	127	669	571	110	437	79	176	50	245
Arrive On Green	0.11	0.40	0.40	0.08	0.38	0.38	0.07	0.16	0.16	0.11	0.20	0.20
Sat Flow, veh/h	2772	1744	1478	1531	1758	1502	1569	2733	495	1556	249	1207
Grp Volume(v), veh/h	130	335	120	55	588	319	40	189	192	147	0	117
Grp Sat Flow(s),veh/h/ln	1386	1744	1478	1531	1758	1502	1569	1617	1612	1556	0	1456
Q Serve(g_s), s	3.9	12.7	4.7	3.1	27.9	15.0	2.2	10.0	10.2	8.3	0.0	6.2
Cycle Q Clear(g_c), s	3.9	12.7	4.7	3.1	27.9	15.0	2.2	10.0	10.2	8.3	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.83
Lane Grp Cap(c), veh/h	297	705	598	127	669	571	110	259	258	176	0	295
V/C Ratio(X)	0.44	0.47	0.20	0.43	0.88	0.56	0.36	0.73	0.75	0.83	0.00	0.40
Avail Cap(c_a), veh/h	310	873	740	180	890	760	175	524	522	249	0	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	19.6	17.3	39.0	25.8	21.8	39.7	35.8	35.9	38.9	0.0	30.9
Incr Delay (d2), s/veh	1.0	0.5	0.2	2.3	8.0	0.9	2.0	4.0	4.3	15.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.0	1.6	1.2	11.9	5.1	0.9	4.1	4.2	3.9	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	20.1	17.4	41.3	33.8	22.7	41.7	39.7	40.1	54.2	0.0	31.8
LnGrp LOS	D	C	B	D	C	C	D	D	D	D	A	C
Approach Vol, veh/h		585			962			421			264	
Approach Delay, s/veh		23.7			30.6			40.1			44.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	42.2	11.0	24.2	14.3	40.1	14.8	20.3
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 11	44.8	* 10	33.3	* 10	45.3	* 14	29.0
Max Q Clear Time (g_c+I1), s	5.1	14.7	4.2	8.2	5.9	29.9	10.3	12.2
Green Ext Time (p_c), s	0.0	2.6	0.0	0.7	0.1	4.2	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	6	356	8	3	164
Future Volume (vph)	17	6	356	8	3	164
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		100	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.962		0.997			
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1638	0	1759	0	1676	1765
Flt Permitted	0.965				0.950	
Satd. Flow (perm)	1638	0	1759	0	1676	1765
Link Speed (mph)	30		35			35
Link Distance (ft)	755		1312			1384
Travel Time (s)	17.2		25.6			27.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	18	7	387	9	3	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	396	0	3	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

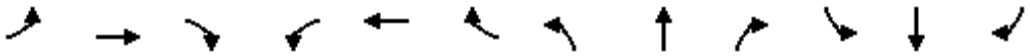
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	6	356	8	3	164
Future Vol, veh/h	17	6	356	8	3	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	7	387	9	3	178

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	576	392	0	0	396	0
Stage 1	392	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	479	657	-	-	1163	-
Stage 1	683	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	478	657	-	-	1163	-
Mov Cap-2 Maneuver	478	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	845	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	515	1163	-
HCM Lane V/C Ratio	-	-	0.049	0.003	-
HCM Control Delay (s)	-	-	12.3	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	186	125	181	402	103	161	230	116	60	112	9
Future Volume (vph)	31	186	125	181	402	103	161	230	116	60	112	9
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		1.00				0.99			
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1404	3353	1500	1538	1679	0	1553	1698	1471	1553	1698	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1404	3353	1475	1538	1679	0	1553	1698	1452	1553	1698	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		16				133			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1312	
Travel Time (s)		5.9			8.2			12.9			25.6	
Confl. Peds. (#/hr)			5			1			1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	15%	2%	2%	5%	3%	5%	4%	6%	4%	4%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	200	134	195	432	111	173	247	125	65	120	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	200	134	195	543	0	173	247	125	65	120	10
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

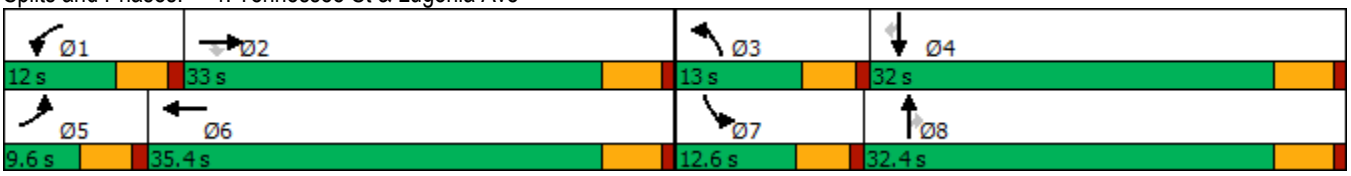


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.6	33.0	33.0	12.0	35.4		13.0	32.4	32.4	12.6	32.0	32.0
Total Split (%)	10.7%	36.7%	36.7%	13.3%	39.3%		14.4%	36.0%	36.0%	14.0%	35.6%	35.6%
Maximum Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.4	27.4	8.1	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		5	5		1			1	1		0	0
Act Effct Green (s)	5.6	17.9	17.9	8.3	28.1		9.5	18.5	18.5	7.7	14.4	14.4
Actuated g/C Ratio	0.08	0.27	0.27	0.12	0.42		0.14	0.28	0.28	0.11	0.21	0.21
v/c Ratio	0.28	0.22	0.27	1.03	0.76		0.79	0.53	0.25	0.36	0.33	0.02
Control Delay	43.6	20.8	6.0	113.9	29.1		63.0	28.4	5.8	40.4	26.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	20.8	6.0	113.9	29.1		63.0	28.4	5.8	40.4	26.9	0.1
LOS	D	C	A	F	C		E	C	A	D	C	A
Approach Delay		17.5			51.5			34.2			30.0	
Approach LOS		B			D			C			C	
90th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.0	27.0	8.1	26.6	26.6
90th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Ped	Ped	Max	Hold	Hold
70th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	19.4	19.4	8.1	19.0	19.0
70th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	0.0	18.4	18.4	7.5	30.4		8.5	16.5	16.5	8.1	16.1	16.1
50th %ile Term Code	Skip	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
30th %ile Green (s)	0.0	13.8	13.8	7.5	25.8		8.5	21.4	21.4	0.0	8.4	8.4
30th %ile Term Code	Skip	Hold	Hold	Max	Gap		Max	Hold	Hold	Skip	Gap	Gap
10th %ile Green (s)	0.0	6.4	6.4	7.5	18.4		8.9	8.4	8.4	0.0	0.0	0.0
10th %ile Term Code	Skip	Gap	Gap	Max	Hold		Hold	Gap	Gap	Skip	Skip	Skip
Stops (vph)	31	125	18	113	362		110	178	16	54	83	0
Fuel Used(gal)	1	3	1	6	8		5	5	1	1	2	0
CO Emissions (g/hr)	53	217	74	412	565		322	358	105	103	161	6
NOx Emissions (g/hr)	10	42	14	80	110		63	70	20	20	31	1
VOC Emissions (g/hr)	12	50	17	96	131		75	83	24	24	37	1
Dilemma Vehicles (#)	0	10	0	0	31		0	12	0	0	5	0
Queue Length 50th (ft)	14	35	0	~102	178		74	94	0	26	43	0
Queue Length 95th (ft)	#52	70	40	#289	#493		#244	186	36	77	95	0
Internal Link Dist (ft)		269			341			583			1232	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	118	1547	752	189	849		220	766	728	207	755	741

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.13	0.18	1.03	0.64		0.79	0.32	0.17	0.31	0.16	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 67			
Natural Cycle: 95			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 37.3		Intersection LOS: D	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 89.6			
70th %ile Actuated Cycle: 82			
50th %ile Actuated Cycle: 69.5			
30th %ile Actuated Cycle: 57.2			
10th %ile Actuated Cycle: 36.8			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: Tennessee St & Lugonia Ave

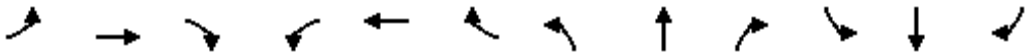


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	186	125	181	402	103	161	230	116	60	112	9
Future Volume (veh/h)	31	186	125	181	402	103	161	230	116	60	112	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1501	1772	1772	1634	1758	1730	1647	1716	1744	1647	1716	1772
Adj Flow Rate, veh/h	33	200	134	195	432	111	173	247	125	65	120	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	15	2	2	5	3	5	4	6	4	4	6	2
Cap, veh/h	51	957	425	202	511	131	209	343	295	88	210	184
Arrive On Green	0.04	0.28	0.28	0.13	0.38	0.38	0.13	0.20	0.20	0.06	0.12	0.12
Sat Flow, veh/h	1430	3367	1494	1556	1348	346	1569	1716	1476	1569	1716	1502
Grp Volume(v), veh/h	33	200	134	195	0	543	173	247	125	65	120	10
Grp Sat Flow(s),veh/h/ln	1430	1683	1494	1556	0	1695	1569	1716	1476	1569	1716	1502
Q Serve(g_s), s	1.3	2.6	4.1	7.2	0.0	16.9	6.2	7.8	4.3	2.4	3.8	0.3
Cycle Q Clear(g_c), s	1.3	2.6	4.1	7.2	0.0	16.9	6.2	7.8	4.3	2.4	3.8	0.3
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	51	957	425	202	0	642	209	343	295	88	210	184
V/C Ratio(X)	0.65	0.21	0.32	0.96	0.00	0.85	0.83	0.72	0.42	0.74	0.57	0.05
Avail Cap(c_a), veh/h	126	1635	725	202	0	894	231	815	701	220	804	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	15.7	16.2	24.9	0.0	16.4	24.3	21.6	20.2	26.8	23.9	22.3
Incr Delay (d2), s/veh	13.0	0.1	0.4	52.6	0.0	5.5	19.8	2.9	1.0	11.4	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	1.3	5.4	0.0	6.5	3.2	3.1	1.4	1.1	1.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	15.8	16.6	77.5	0.0	21.8	44.1	24.4	21.1	38.2	26.3	22.5
LnGrp LOS	D	B	B	E	A	C	D	C	C	D	C	C
Approach Vol, veh/h		367			738			545			195	
Approach Delay, s/veh		18.3			36.6			29.9			30.1	
Approach LOS		B			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	21.4	12.2	12.1	6.6	26.8	7.7	16.5
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.5	28.0	8.5	27.0	5.1	30.4	8.1	27.4
Max Q Clear Time (g_c+I1), s	9.2	6.1	8.2	5.8	3.3	18.9	4.4	9.8
Green Ext Time (p_c), s	0.0	1.5	0.0	0.6	0.0	2.7	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	30.3
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	217	5	167	209	444	0	0	332	157
Future Volume (vph)	0	0	0	217	5	167	209	444	0	0	332	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.936						0.941	
Flt Protected					0.973		0.950					
Satd. Flow (prot)	0	0	0	0	3050	0	1568	3196	0	0	3089	0
Flt Permitted					0.973		0.950					
Satd. Flow (perm)	0	0	0	0	3050	0	1568	3196	0	0	3089	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					172						167	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1108			612			817	
Travel Time (s)		19.4			25.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	13%	2%	3%	7%	2%	2%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	224	5	172	215	458	0	0	342	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	401	0	215	458	0	0	563	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (ft)				20	100		20	100			100	
Trailing Detector (ft)				0	0		0	0			0	
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4								
Detector Phase				4	4		1	6			2	
Switch Phase												



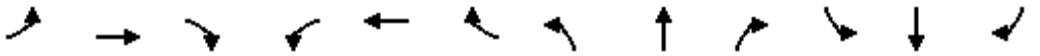
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				27.0	27.0		31.0	63.0			32.0	
Total Split (%)				30.0%	30.0%		34.4%	70.0%			35.6%	
Maximum Green (s)				21.5	21.5		26.0	57.5			26.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								2				
Act Effct Green (s)					12.6		17.6	66.4			43.8	
Actuated g/C Ratio					0.14		0.20	0.74			0.49	
v/c Ratio					0.70		0.70	0.19			0.35	
Control Delay					27.0		36.4	7.5			12.1	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					27.0		36.4	7.5			12.1	
LOS					C		D	A			B	
Approach Delay					27.0			16.7			12.1	
Approach LOS					C			B			B	
90th %ile Green (s)				18.2	18.2		24.2	60.8			31.6	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				14.5	14.5		20.4	64.5			39.1	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				12.4	12.4		17.6	66.6			44.0	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				10.4	10.4		14.8	68.6			48.8	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				7.5	7.5		10.8	71.5			55.7	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					207		193	251			216	
Fuel Used(gal)					7		4	5			8	
CO Emissions (g/hr)					464		274	317			563	
NOx Emissions (g/hr)					90		53	62			110	
VOC Emissions (g/hr)					108		64	73			130	
Dilemma Vehicles (#)					0		0	29			27	
Queue Length 50th (ft)					64		117	90			66	
Queue Length 95th (ft)					105		189	110			136	
Internal Link Dist (ft)		775			1028			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					859		452	2358			1590	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.47		0.48	0.19			0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 46.5 (52%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 17.7		Intersection LOS: B	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Tennessee St & I-10 WB Ramps

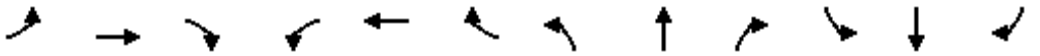




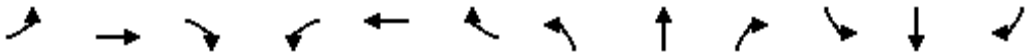
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	217	5	167	209	444	0	0	332	157
Future Volume (veh/h)	0	0	0	217	5	167	209	444	0	0	332	157
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1772	1617	1772	1660	1702	0	0	1758	1716
Adj Flow Rate, veh/h				224	5	172	215	458	0	0	342	221
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Percent Heavy Veh, %				2	13	2	3	7	0	0	3	6
Cap, veh/h				274	7	238	246	2264	0	0	960	608
Arrive On Green				0.18	0.18	0.18	0.31	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1540	39	1338	1581	3318	0	0	2049	1243
Grp Volume(v), veh/h				224	0	177	215	458	0	0	290	273
Grp Sat Flow(s),veh/h/ln				1540	0	1377	1581	1617	0	0	1670	1534
Q Serve(g_s), s				12.6	0.0	10.9	11.6	0.0	0.0	0.0	9.7	9.9
Cycle Q Clear(g_c), s				12.6	0.0	10.9	11.6	0.0	0.0	0.0	9.7	9.9
Prop In Lane				1.00		0.97	1.00		0.00	0.00		0.81
Lane Grp Cap(c), veh/h				274	0	244	246	2264	0	0	817	751
V/C Ratio(X)				0.82	0.00	0.72	0.88	0.20	0.00	0.00	0.36	0.36
Avail Cap(c_a), veh/h				368	0	329	457	2264	0	0	817	751
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.6	0.0	34.9	30.2	0.0	0.0	0.0	14.2	14.3
Incr Delay (d2), s/veh				10.2	0.0	5.1	8.8	0.2	0.0	0.0	1.2	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.4	0.0	3.9	4.2	0.1	0.0	0.0	3.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.8	0.0	40.0	39.0	0.2	0.0	0.0	15.4	15.6
LnGrp LOS				D	A	D	D	A	A	A	B	B
Approach Vol, veh/h					401			673			563	
Approach Delay, s/veh					43.3			12.6			15.5	
Approach LOS					D			B			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.0	49.5		21.5		68.5						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	26.0	26.5		21.5		57.5						
Max Q Clear Time (g_c+I1), s	13.6	11.9		14.6		2.0						
Green Ext Time (p_c), s	0.5	3.0		1.4		3.3						

Intersection Summary		
HCM 6th Ctrl Delay		21.1
HCM 6th LOS		C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	144	321	0	0	0	0	510	112	124	425	0
Future Volume (vph)	143	144	321	0	0	0	0	510	112	124	425	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.921						0.973				
Flt Protected		0.988								0.950		
Satd. Flow (prot)	0	2980	0	0	0	0	0	3169	0	1553	3353	0
Flt Permitted		0.988								0.950		
Satd. Flow (perm)	0	2980	0	0	0	0	0	3169	0	1553	3353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		316						33				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	7%	3%	2%	2%	2%	2%	5%	5%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	146	147	328	0	0	0	0	520	114	127	434	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	621	0	0	0	0	0	634	0	127	434	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												



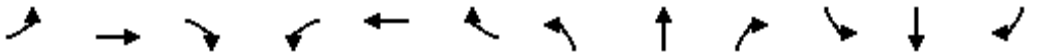
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	31.0	31.0						39.0		20.0	59.0	
Total Split (%)	34.4%	34.4%						43.3%		22.2%	65.6%	
Maximum Green (s)	25.5	25.5						33.5		15.0	53.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								3				
Act Effct Green (s)		16.7						44.7		12.6	62.3	
Actuated g/C Ratio		0.19						0.50		0.14	0.69	
v/c Ratio		0.77						0.40		0.59	0.19	
Control Delay		22.7						16.3		41.9	2.7	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		22.7						16.3		41.9	2.7	
LOS		C						B		D	A	
Approach Delay		22.7						16.3			11.6	
Approach LOS		C						B			B	
90th %ile Green (s)	24.5	24.5						31.9		17.6	54.5	
90th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
70th %ile Green (s)	20.0	20.0						39.4		14.6	59.0	
70th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
50th %ile Green (s)	16.5	16.5						44.9		12.6	62.5	
50th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
30th %ile Green (s)	13.7	13.7						49.8		10.5	65.3	
30th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
10th %ile Green (s)	8.8	8.8						57.7		7.5	70.2	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		282						372		110	108	
Fuel Used(gal)		10						7		2	3	
CO Emissions (g/hr)		709						523		170	204	
NOx Emissions (g/hr)		138						102		33	40	
VOC Emissions (g/hr)		164						121		39	47	
Dilemma Vehicles (#)		0						35		0	8	
Queue Length 50th (ft)		86						106		64	12	
Queue Length 95th (ft)		131						196		93	16	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1070						1603		267	2321	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.58						0.40		0.48	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77.6 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 17.0		Intersection LOS: B	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Tennessee St & I-10 EB Ramps

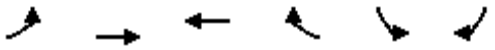




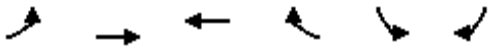
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	144	321	0	0	0	0	510	112	124	425	0
Future Volume (veh/h)	143	144	321	0	0	0	0	510	112	124	425	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1730	1702	1758				0	1730	1730	1647	1772	0
Adj Flow Rate, veh/h	146	147	328				0	520	114	127	434	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	7	3				0	5	5	4	2	0
Cap, veh/h	213	214	370				0	1249	273	157	2090	0
Arrive On Green	0.26	0.26	0.26				0.00	0.47	0.47	0.03	0.20	0.00
Sat Flow, veh/h	827	833	1442				0	2769	585	1569	3455	0
Grp Volume(v), veh/h	293	0	328				0	318	316	127	434	0
Grp Sat Flow(s),veh/h/ln	1660	0	1442				0	1643	1624	1569	1683	0
Q Serve(g_s), s	14.3	0.0	19.7				0.0	11.5	11.6	7.2	9.6	0.0
Cycle Q Clear(g_c), s	14.3	0.0	19.7				0.0	11.5	11.6	7.2	9.6	0.0
Prop In Lane	0.50		1.00				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	426	0	370				0	765	756	157	2090	0
V/C Ratio(X)	0.69	0.00	0.89				0.00	0.42	0.42	0.81	0.21	0.00
Avail Cap(c_a), veh/h	470	0	409				0	765	756	261	2090	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	30.2	0.0	32.2				0.0	15.9	16.0	42.7	17.4	0.0
Incr Delay (d2), s/veh	3.7	0.0	19.0				0.0	1.7	1.7	9.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	8.6				0.0	4.4	4.4	3.3	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	0.0	51.1				0.0	17.6	17.7	51.7	17.6	0.0
LnGrp LOS	C	A	D				A	B	B	D	B	A
Approach Vol, veh/h		621						634			561	
Approach Delay, s/veh		43.0						17.6			25.3	
Approach LOS		D						B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		61.4			14.0	47.4		28.6				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		53.5			15.0	33.5		25.5				
Max Q Clear Time (g_c+I1), s		11.6			9.2	13.6		21.7				
Green Ext Time (p_c), s		3.1			0.1	3.7		1.4				

Intersection Summary			
HCM 6th Ctrl Delay		28.7	
HCM 6th LOS		C	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	196	474	98	146	64
Future Volume (vph)	14	196	474	98	146	64
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.974			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3320	3214	0	2891	1485
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3320	3214	0	2891	1485
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			59			67
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	15	206	499	103	154	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	206	602	0	154	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



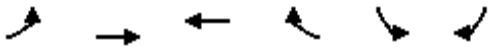
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	46.0	37.0		14.0	14.0
Total Split (%)	15.0%	76.7%	61.7%		23.3%	23.3%
Maximum Green (s)	4.2	39.7	30.7		9.2	9.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)			7.0			
Flash Dont Walk (s)			19.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)	4.3	19.3	18.0		7.3	7.3
Actuated g/C Ratio	0.13	0.57	0.53		0.21	0.21
v/c Ratio	0.07	0.11	0.35		0.25	0.18
Control Delay	17.1	5.4	7.4		13.6	6.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	17.1	5.4	7.4		13.6	6.3
LOS	B	A	A		B	A
Approach Delay		6.2	7.4		11.3	
Approach LOS		A	A		B	
90th %ile Green (s)	4.2	27.0	18.0		9.2	9.2
90th %ile Term Code	Max	Hold	Gap		Max	Max
70th %ile Green (s)	0.0	12.3	12.3		7.6	7.6
70th %ile Term Code	Skip	Hold	Gap		Gap	Gap
50th %ile Green (s)	0.0	11.6	11.6		7.0	7.0
50th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
30th %ile Green (s)	0.0	16.7	16.7		6.6	6.6
30th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
10th %ile Green (s)	0.0	21.5	21.5		0.0	0.0
10th %ile Term Code	Skip	Dwell	Dwell		Skip	Skip
Stops (vph)	16	90	303		108	20
Fuel Used(gal)	0	4	7		4	1
CO Emissions (g/hr)	31	314	502		279	101
NOx Emissions (g/hr)	6	61	98		54	20
VOC Emissions (g/hr)	7	73	116		65	24
Dilemma Vehicles (#)	0	23	63		0	0
Queue Length 50th (ft)	2	9	28		9	0
Queue Length 95th (ft)	17	22	91		38	24
Internal Link Dist (ft)		2474	430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	202	3213	2918		809	463

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.07	0.06	0.21		0.19	0.14

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 34			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 31.3%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 47.3			
70th %ile Actuated Cycle: 31			
50th %ile Actuated Cycle: 29.7			
30th %ile Actuated Cycle: 34.4			
10th %ile Actuated Cycle: 27.8			

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr





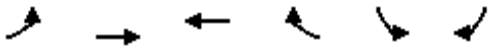
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	196	474	98	146	64
Future Volume (veh/h)	14	196	474	98	146	64
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1758	1744	1772	1575	1758
Adj Flow Rate, veh/h	15	206	499	103	154	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	3	4	2	2	3
Cap, veh/h	19	1668	906	186	403	206
Arrive On Green	0.01	0.50	0.33	0.33	0.14	0.14
Sat Flow, veh/h	1594	3428	2824	562	2910	1490
Grp Volume(v), veh/h	15	206	301	301	154	67
Grp Sat Flow(s),veh/h/ln	1594	1670	1657	1643	1455	1490
Q Serve(g_s), s	0.3	1.0	4.6	4.6	1.5	1.2
Cycle Q Clear(g_c), s	0.3	1.0	4.6	4.6	1.5	1.2
Prop In Lane	1.00			0.34	1.00	1.00
Lane Grp Cap(c), veh/h	19	1668	548	543	403	206
V/C Ratio(X)	0.80	0.12	0.55	0.55	0.38	0.33
Avail Cap(c_a), veh/h	219	4329	1660	1646	874	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.1	4.1	8.4	8.4	12.0	11.9
Incr Delay (d2), s/veh	52.9	0.0	0.9	0.9	0.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	1.0	1.0	0.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	68.0	4.1	9.2	9.3	12.6	12.8
LnGrp LOS	E	A	A	A	B	B
Approach Vol, veh/h		221	602		221	
Approach Delay, s/veh		8.5	9.3		12.7	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.6		9.0	5.2	16.4
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 40		* 9.2	* 4.2	* 31
Max Q Clear Time (g_c+I1), s		3.0		3.5	2.3	6.6
Green Ext Time (p_c), s		1.3		0.3	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	419	678	0	7	52
Future Volume (vph)	0	419	678	0	7	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			100	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.882	
Flt Protected					0.994	
Satd. Flow (prot)	0	4818	3353	0	1547	0
Flt Permitted					0.994	
Satd. Flow (perm)	0	4818	3353	0	1547	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		230	480		362	
Travel Time (s)		4.5	9.4		8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	455	737	0	8	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	455	737	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes				
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

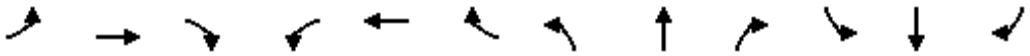
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↱	
Traffic Vol, veh/h	0	419	678	0	7	52
Future Vol, veh/h	0	419	678	0	7	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	455	737	0	8	57

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	919	369
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	0	-	-	0	303	628
Stage 1	0	-	-	0	422	-
Stage 2	0	-	-	0	792	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	303	628
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	792	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	578
HCM Lane V/C Ratio	-	-	0.111
HCM Control Delay (s)	-	-	12
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	309	84	40	538	6	88	2	26	13	7	52
Future Volume (vph)	33	309	84	40	538	6	88	2	26	13	7	52
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98									
Frt			0.850		0.998			0.969			0.903	
Flt Protected	0.950			0.950				0.964			0.991	
Satd. Flow (prot)	1676	3257	1515	1583	3346	0	0	1608	0	0	1579	0
Flt Permitted	0.418			0.950				0.727			0.934	
Satd. Flow (perm)	738	3257	1481	1583	3346	0	0	1213	0	0	1488	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		3			18			57	
Link Speed (mph)		35			35			40			30	
Link Distance (ft)		480			320			976			370	
Travel Time (s)		9.4			6.2			16.6			8.4	
Confl. Peds. (#/hr)			1									
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	5%	1%	2%	2%	2%	3%	2%	10%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	351	95	45	611	7	100	2	30	14	8	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	351	95	45	618	0	0	132	0	0	79	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												

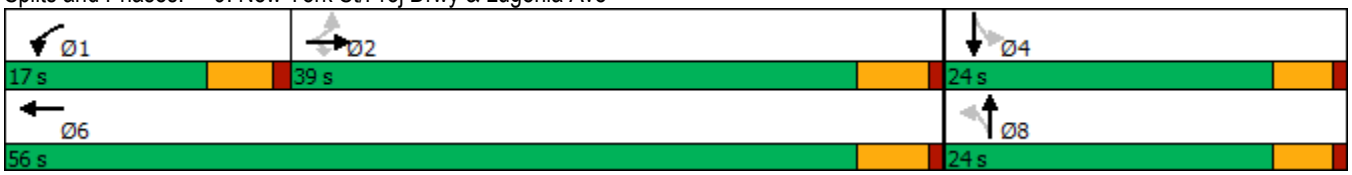


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	15.0	10.0	15.0		5.0	5.0		15.0	15.0	
Minimum Split (s)	23.3	23.3	23.3	15.0	23.3		22.5	22.5		23.0	23.0	
Total Split (s)	39.0	39.0	39.0	17.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	48.8%	48.8%	48.8%	21.3%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	33.7	33.7	33.7	12.0	50.7		19.5	19.5		19.5	19.5	
Yellow Time (s)	4.3	4.3	4.3	4.0	4.3		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.0	5.3			4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0				11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1	1				0	0		0	0	
Act Effct Green (s)	24.2	24.2	24.2	11.4	28.7			11.8			17.2	
Actuated g/C Ratio	0.59	0.59	0.59	0.28	0.70			0.29			0.42	
v/c Ratio	0.08	0.18	0.10	0.10	0.27			0.37			0.12	
Control Delay	14.6	11.6	4.8	17.9	6.0			15.8			7.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	14.6	11.6	4.8	17.9	6.0			15.8			7.6	
LOS	B	B	A	B	A			B			A	
Approach Delay		10.5			6.8			15.8			7.6	
Approach LOS		B			A			B			A	
90th %ile Green (s)	16.0	16.0	16.0	10.0	31.0		15.0	15.0		15.0	15.0	
90th %ile Term Code	Gap	Gap	Gap	Min	Hold		Hold	Hold		Min	Min	
70th %ile Green (s)	15.0	15.0	15.0	10.0	30.0		15.0	15.0		15.0	15.0	
70th %ile Term Code	Min	Min	Min	Min	Hold		Hold	Hold		Min	Min	
50th %ile Green (s)	15.0	15.0	15.0	0.0	15.0		15.0	15.0		15.0	15.0	
50th %ile Term Code	Min	Min	Min	Skip	Min		Hold	Hold		Min	Min	
30th %ile Green (s)	15.0	15.0	15.0	0.0	15.0		0.0	0.0		0.0	0.0	
30th %ile Term Code	Min	Min	Min	Skip	Min		Skip	Skip		Skip	Skip	
10th %ile Green (s)	30.0	30.0	30.0	0.0	30.0		0.0	0.0		0.0	0.0	
10th %ile Term Code	Dwell	Dwell	Dwell	Skip	Dwell		Skip	Skip		Skip	Skip	
Stops (vph)	26	173	18	34	218			73			25	
Fuel Used(gal)	0	3	1	0	4			2			0	
CO Emissions (g/hr)	29	217	36	35	249			130			32	
NOx Emissions (g/hr)	6	42	7	7	48			25			6	
VOC Emissions (g/hr)	7	50	8	8	58			30			7	
Dilemma Vehicles (#)	0	17	0	0	29			10			0	
Queue Length 50th (ft)	5	26	0	8	51			16			3	
Queue Length 95th (ft)	28	77	26	35	75			72			31	
Internal Link Dist (ft)		400			240			896			290	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	593	2618	1209	527	3235			665			832	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.06	0.13	0.08	0.09	0.19			0.20			0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 41.2			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 55.8			
70th %ile Actuated Cycle: 54.8			
50th %ile Actuated Cycle: 39.8			
30th %ile Actuated Cycle: 20.3			
10th %ile Actuated Cycle: 35.3			

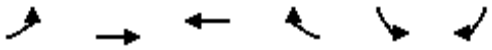
Splits and Phases: 9: New York St/Proj Drwy & Lugonia Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	309	84	40	538	6	88	2	26	13	7	52
Future Volume (veh/h)	33	309	84	40	538	6	88	2	26	13	7	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1730	1786	1673	1772	1772	1758	1772	1660	1772	1772	1772
Adj Flow Rate, veh/h	36	351	95	45	611	7	100	2	30	14	8	57
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	1	2	2	2	3	2	10	2	2	2
Cap, veh/h	398	1017	468	149	1726	20	427	23	94	127	85	323
Arrive On Green	0.31	0.31	0.31	0.09	0.51	0.51	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	805	3287	1511	1594	3409	39	1016	80	322	135	292	1107
Grp Volume(v), veh/h	36	351	95	45	302	316	132	0	0	79	0	0
Grp Sat Flow(s),veh/h/ln	805	1643	1511	1594	1683	1765	1419	0	0	1534	0	0
Q Serve(g_s), s	1.6	4.0	2.2	1.3	5.2	5.2	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.6	4.0	2.2	1.3	5.2	5.2	3.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.76		0.23	0.18		0.72
Lane Grp Cap(c), veh/h	398	1017	468	149	852	894	544	0	0	534	0	0
V/C Ratio(X)	0.09	0.35	0.20	0.30	0.35	0.35	0.24	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	708	2285	1051	395	1761	1846	697	0	0	701	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.1	12.9	12.3	20.5	7.2	7.2	13.2	0.0	0.0	12.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.2	1.1	0.2	0.2	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.2	0.7	0.5	1.4	1.4	0.9	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	13.1	12.5	21.6	7.4	7.4	13.5	0.0	0.0	12.9	0.0	0.0
LnGrp LOS	B	B	B	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		482			663			132			79	
Approach Delay, s/veh		13.0			8.4			13.5			12.9	
Approach LOS		B			A			B			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.5	20.3		18.6		29.8		18.6				
Change Period (Y+Rc), s	5.0	5.3		4.5		5.3		4.5				
Max Green Setting (Gmax), s	12.0	33.7		19.5		50.7		19.5				
Max Q Clear Time (g_c+I1), s	3.3	6.0		3.8		7.2		5.2				
Green Ext Time (p_c), s	0.0	2.9		0.3		4.0		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			10.8									
HCM 6th LOS			B									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	320	541	3	6	43
Future Volume (vph)	28	320	541	3	6	43
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.882	
Flt Protected	0.950				0.994	
Satd. Flow (prot)	1568	3226	1763	0	1547	0
Flt Permitted	0.950				0.994	
Satd. Flow (perm)	1568	3226	1763	0	1547	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	6%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	32	364	615	3	7	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	364	618	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	320	541	3	6	43
Future Vol, veh/h	28	320	541	3	6	43
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	6	2	2	2	2
Mvmt Flow	32	364	615	3	7	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	619	0	-	0	864	618
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	246	-
Critical Hdwy	4.145	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.2285	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	953	-	-	-	309	488
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	773	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	952	-	-	-	298	488
Mov Cap-2 Maneuver	-	-	-	-	298	-
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	772	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	952	-	-	-	453
HCM Lane V/C Ratio	0.033	-	-	-	0.123
HCM Control Delay (s)	8.9	-	-	-	14.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	23	0	3	0	6	25	0	6	0
Future Volume (vph)	0	0	0	23	0	3	0	6	25	0	6	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.983			0.891				
Flt Protected					0.958							
Satd. Flow (prot)	0	1765	0	0	1678	0	0	1563	0	0	1782	0
Flt Permitted					0.958							
Satd. Flow (perm)	0	1765	0	0	1678	0	0	1563	0	0	1782	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		331			965			1320			301	
Travel Time (s)		7.5			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	3%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	28	0	4	0	7	30	0	7	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	32	0	0	37	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

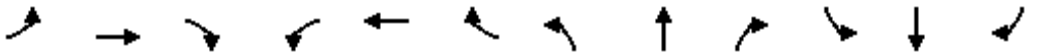
Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	23	0	3	0	6	25	0	6	0
Future Vol, veh/h	0	0	0	23	0	3	0	6	25	0	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	1	2	1	2	1	3	1	1	2
Mvmt Flow	0	0	0	28	0	4	0	7	30	0	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4	0	0	1	0	0	-	61	1	78	59	-
Stage 1	-	-	-	-	-	-	-	1	-	58	58	-
Stage 2	-	-	-	-	-	-	-	60	-	20	1	-
Critical Hdwy	4.12	-	-	4.11	-	-	-	6.51	6.23	7.11	6.51	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	-	4.009	3.327	3.509	4.009	-
Pot Cap-1 Maneuver	1618	-	-	1628	-	-	0	832	1081	913	834	0
Stage 1	-	-	-	-	-	-	0	897	-	956	849	0
Stage 2	-	-	-	-	-	-	0	847	-	1001	897	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1618	-	-	1628	-	-	-	818	1081	870	820	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	818	-	870	820	-
Stage 1	-	-	-	-	-	-	-	897	-	956	835	-
Stage 2	-	-	-	-	-	-	-	833	-	965	897	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	6.4	8.7	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1018	1618	-	-	1628	-	-	820
HCM Lane V/C Ratio	0.037	-	-	-	0.017	-	-	0.009
HCM Control Delay (s)	8.7	0	-	-	7.2	0	-	9.4
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	10	15	131	25	49	5	189	44	42	254	7
Future Volume (vph)	27	10	15	131	25	49	5	189	44	42	254	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.961			0.967			0.975			0.997	
Flt Protected		0.975			0.969			0.999			0.993	
Satd. Flow (prot)	0	1618	0	0	1662	0	0	1726	0	0	1762	0
Flt Permitted		0.975			0.969			0.999			0.993	
Satd. Flow (perm)	0	1618	0	0	1662	0	0	1726	0	0	1762	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	7%	8%	1%	1%	3%	1%	1%	4%	1%	1%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	11	16	138	26	52	5	199	46	44	267	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	216	0	0	250	0	0	318	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

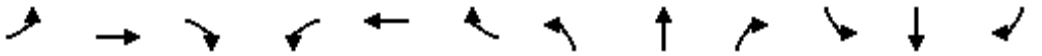
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	10	15	131	25	49	5	189	44	42	254	7
Future Vol, veh/h	27	10	15	131	25	49	5	189	44	42	254	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	7	8	1	1	3	1	1	4	1	1	7
Mvmt Flow	28	11	16	138	26	52	5	199	46	44	267	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	11.1	10.8	12.2
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	52%	64%	14%
Vol Thru, %	79%	19%	12%	84%
Vol Right, %	18%	29%	24%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	52	205	303
LT Vol	5	27	131	42
Through Vol	189	10	25	254
RT Vol	44	15	49	7
Lane Flow Rate	251	55	216	319
Geometry Grp	1	1	1	1
Degree of Util (X)	0.35	0.087	0.326	0.451
Departure Headway (Hd)	5.036	5.698	5.443	5.085
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	714	628	660	711
Service Time	3.068	3.743	3.478	3.085
HCM Lane V/C Ratio	0.352	0.088	0.327	0.449
HCM Control Delay	10.8	9.3	11.1	12.2
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.6	0.3	1.4	2.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	239	45	191	427	25	45	174	94	23	295	74
Future Volume (vph)	42	239	45	191	427	25	45	174	94	23	295	74
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.992				0.850			0.850
Flt Protected	0.950			0.950				0.990			0.996	
Satd. Flow (prot)	1599	3214	0	1599	3315	0	0	1764	1443	0	1773	1500
Flt Permitted	0.950			0.950				0.797			0.966	
Satd. Flow (perm)	1599	3214	0	1599	3315	0	0	1420	1443	0	1719	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			8				135			135
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		425			524			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	4%	3%	1%	2%	8%	1%	1%	6%	3%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	46	260	49	208	464	27	49	189	102	25	321	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	309	0	208	491	0	0	238	102	0	346	80
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	11.1	32.0		24.0	44.9		34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	12.3%	35.6%		26.7%	49.9%		37.8%	37.8%	37.8%	37.8%	37.8%	37.8%
Maximum Green (s)	6.4	27.3		19.3	40.2		29.3	29.3	29.3	29.3	29.3	29.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.7	4.7		4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	6.4	11.0		13.0	23.1			17.2	17.2		17.2	17.2
Actuated g/C Ratio	0.11	0.20		0.23	0.41			0.31	0.31		0.31	0.31
v/c Ratio	0.25	0.47		0.56	0.36			0.55	0.19		0.66	0.14
Control Delay	31.9	22.8		27.5	14.5			22.6	2.9		24.5	1.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	31.9	22.8		27.5	14.5			22.6	2.9		24.5	1.5
LOS	C	C		C	B			C	A		C	A
Approach Delay		24.0			18.4			16.7			20.2	
Approach LOS		C			B			B			C	
90th %ile Green (s)	6.4	15.5		19.3	28.4		27.3	27.3	27.3	27.3	27.3	27.3
90th %ile Term Code	Max	Gap		Max	Hold		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	6.4	12.8		15.9	22.3		20.7	20.7	20.7	20.7	20.7	20.7
70th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
50th %ile Green (s)	6.4	10.8		12.9	17.3		16.7	16.7	16.7	16.7	16.7	16.7
50th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
30th %ile Green (s)	0.0	9.1		10.4	24.2		13.5	13.5	13.5	13.5	13.5	13.5
30th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
10th %ile Green (s)	0.0	7.3		7.8	19.8		9.9	9.9	9.9	9.9	9.9	9.9
10th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
Stops (vph)	39	210		153	286			165	7		250	3
Fuel Used(gal)	1	5		3	5			4	1		7	1
CO Emissions (g/hr)	60	342		206	363			254	39		484	50
NOx Emissions (g/hr)	12	67		40	71			49	7		94	10
VOC Emissions (g/hr)	14	79		48	84			59	9		112	12
Dilemma Vehicles (#)	0	17		0	28			14	0		21	0
Queue Length 50th (ft)	14	43		59	64			63	0		96	0
Queue Length 95th (ft)	53	100		149	126			150	18		210	9
Internal Link Dist (ft)		345			444			591			1254	
Turn Bay Length (ft)	105			100					50			50
Base Capacity (vph)	192	1662		580	2489			782	855		947	886

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.24	0.19		0.36	0.20			0.30	0.12		0.37	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 56.1			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 19.6		Intersection LOS: B	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 76.2			
70th %ile Actuated Cycle: 63.5			
50th %ile Actuated Cycle: 54.5			
30th %ile Actuated Cycle: 47.1			
10th %ile Actuated Cycle: 39.1			

Splits and Phases: 13: Texas St & Lugonia Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	239	45	191	427	25	45	174	94	23	295	74
Future Volume (veh/h)	42	239	45	191	427	25	45	174	94	23	295	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1744	1758	1687	1772	1688	1786	1786	1716	1758	1786	1772
Adj Flow Rate, veh/h	46	260	49	208	464	27	49	189	102	25	321	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	4	3	1	2	8	1	1	6	3	1	2
Cap, veh/h	70	408	76	253	841	49	71	218	683	63	466	705
Arrive On Green	0.04	0.15	0.15	0.16	0.26	0.26	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1606	2789	518	1606	3234	188	3	465	1454	1	992	1502
Grp Volume(v), veh/h	46	153	156	208	241	250	238	0	102	346	0	80
Grp Sat Flow(s),veh/h/ln	1606	1657	1651	1606	1683	1738	468	0	1454	993	0	1502
Q Serve(g_s), s	1.8	5.4	5.6	7.8	7.7	7.7	0.2	0.0	2.5	0.2	0.0	1.9
Cycle Q Clear(g_c), s	1.8	5.4	5.6	7.8	7.7	7.7	29.2	0.0	2.5	29.2	0.0	1.9
Prop In Lane	1.00		0.31	1.00		0.11	0.21		1.00	0.07		1.00
Lane Grp Cap(c), veh/h	70	242	241	253	438	452	289	0	683	529	0	705
V/C Ratio(X)	0.66	0.63	0.65	0.82	0.55	0.55	0.82	0.00	0.15	0.65	0.00	0.11
Avail Cap(c_a), veh/h	165	727	724	498	1088	1123	291	0	685	531	0	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.3	25.0	25.0	25.4	19.9	19.9	15.1	0.0	9.4	12.8	0.0	9.2
Incr Delay (d2), s/veh	9.9	2.7	2.9	6.6	1.1	1.1	16.9	0.0	0.1	2.9	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	2.2	3.2	2.9	3.0	3.1	0.0	0.7	3.0	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	27.7	27.9	31.9	21.0	21.0	32.0	0.0	9.5	15.7	0.0	9.3
LnGrp LOS	D	C	C	C	C	C	C	A	A	B	A	A
Approach Vol, veh/h		355			699			340			426	
Approach Delay, s/veh		29.3			24.2			25.3			14.5	
Approach LOS		C			C			C			B	

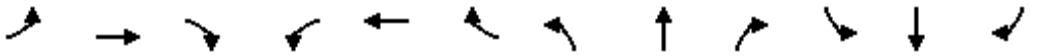
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.5	13.8		34.0	7.4	20.9		34.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 19	* 27		* 29	* 6.4	* 40		* 29				
Max Q Clear Time (g_c+I1), s	9.8	7.6		31.2	3.8	9.7		31.2				
Green Ext Time (p_c), s	0.4	1.6		0.0	0.0	3.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		23.1	
HCM 6th LOS		C	

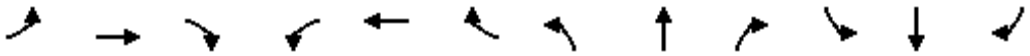
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix F:
Existing Year With Project (Scenario A) PM Peak Hour Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	582	85	125	232	129	49	61	269	161	256	125
Future Volume (vph)	102	582	85	125	232	129	49	61	269	161	256	125
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											1.00	
Frt			0.850			0.850			0.850		0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			155			113		75	
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		1161			720			1341			1495	
Travel Time (s)		26.4			16.4			26.1			34.0	
Confl. Peds. (#/hr)												2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	6%	4%	2%	2%	2%	3%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	105	600	88	129	239	133	51	63	277	166	264	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	600	88	129	239	133	51	63	277	166	393	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

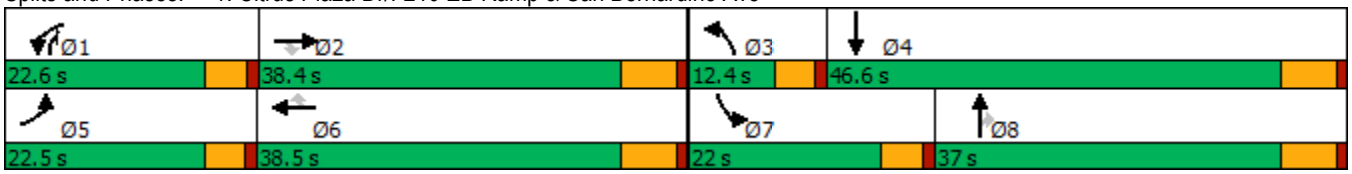


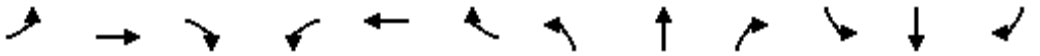
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.4	38.4	22.6	38.5	38.5	12.4	37.0	22.6	22.0	46.6	
Total Split (%)	18.8%	32.0%	32.0%	18.8%	32.1%	32.1%	10.3%	30.8%	18.8%	18.3%	38.8%	
Maximum Green (s)	17.8	32.4	32.4	17.9	32.5	32.5	7.7	31.0	17.9	17.3	40.6	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			2	
Act Effct Green (s)	11.4	21.3	21.3	12.4	26.2	26.2	7.5	10.1	25.0	15.2	20.0	
Actuated g/C Ratio	0.15	0.27	0.27	0.16	0.33	0.33	0.10	0.13	0.32	0.19	0.26	
v/c Ratio	0.46	0.66	0.17	0.52	0.42	0.22	0.34	0.28	0.50	0.55	0.46	
Control Delay	43.0	30.8	0.8	43.6	28.2	4.3	47.7	38.6	15.9	42.3	23.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.0	30.8	0.8	43.6	28.2	4.3	47.7	38.6	15.9	42.3	23.8	
LOS	D	C	A	D	C	A	D	D	B	D	C	
Approach Delay		29.1			25.8			23.7			29.3	
Approach LOS		C			C			C			C	
90th %ile Green (s)	17.4	32.4	32.4	17.9	32.9	32.9	7.7	21.4	17.9	17.3	31.0	
90th %ile Term Code	Gap	Max	Max	Max	Hold	Hold	Max	Hold	Max	Max	Ped	
70th %ile Green (s)	13.3	25.6	25.6	14.8	27.1	27.1	7.7	10.0	14.8	17.3	19.6	
70th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Max	Hold	
50th %ile Green (s)	11.1	21.6	21.6	12.3	22.8	22.8	7.7	8.5	12.3	14.9	15.7	
50th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Gap	Hold	
30th %ile Green (s)	9.1	17.6	17.6	10.0	18.5	18.5	0.0	7.2	10.0	12.1	24.0	
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Skip	Gap	Gap	Gap	Hold	
10th %ile Green (s)	0.0	11.1	11.1	7.1	22.9	22.9	0.0	0.0	7.1	11.3	10.0	
10th %ile Term Code	Skip	Gap	Gap	Gap	Hold	Hold	Skip	Skip	Gap	Hold	Min	
Stops (vph)	85	473	0	106	172	11	45	51	113	132	237	
Fuel Used(gal)	2	12	1	2	4	1	2	2	7	4	8	
CO Emissions (g/hr)	160	806	55	168	251	63	122	142	479	279	531	
NOx Emissions (g/hr)	31	157	11	33	49	12	24	28	93	54	103	
VOC Emissions (g/hr)	37	187	13	39	58	15	28	33	111	65	123	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	3	0	0	0	
Queue Length 50th (ft)	48	136	0	59	96	0	24	29	59	75	73	
Queue Length 95th (ft)	124	253	2	147	216	32	76	77	147	#200	141	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	394	1518	764	396	772	754	170	765	683	379	1828	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.27	0.40	0.12	0.33	0.31	0.18	0.30	0.08	0.41	0.44	0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 78.3			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 27.5		Intersection LOS: C	
Intersection Capacity Utilization 59.4%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 110.4			
70th %ile Actuated Cycle: 89.1			
50th %ile Actuated Cycle: 78.7			
30th %ile Actuated Cycle: 68.3			
10th %ile Actuated Cycle: 44.9			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	582	85	125	232	129	49	61	269	161	256	125
Future Volume (veh/h)	102	582	85	125	232	129	49	61	269	161	256	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1716	1744	1673	1772	1772	1660	1772	1758
Adj Flow Rate, veh/h	105	600	88	129	239	133	51	63	277	166	264	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	6	4	2	2	2	3	2	3
Cap, veh/h	150	843	376	175	455	392	71	362	471	214	653	310
Arrive On Green	0.09	0.25	0.25	0.11	0.27	0.27	0.04	0.20	0.20	0.14	0.30	0.30
Sat Flow, veh/h	1594	3367	1502	1594	1716	1478	1594	1772	1502	1581	2214	1050
Grp Volume(v), veh/h	105	600	88	129	239	133	51	63	277	166	199	194
Grp Sat Flow(s),veh/h/ln	1594	1683	1502	1594	1716	1478	1594	1772	1502	1581	1683	1580
Q Serve(g_s), s	4.5	11.6	3.3	5.6	8.5	5.2	2.2	2.1	11.0	7.2	6.7	7.0
Cycle Q Clear(g_c), s	4.5	11.6	3.3	5.6	8.5	5.2	2.2	2.1	11.0	7.2	6.7	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	150	843	376	175	455	392	71	362	471	214	497	466
V/C Ratio(X)	0.70	0.71	0.23	0.74	0.52	0.34	0.72	0.17	0.59	0.78	0.40	0.42
Avail Cap(c_a), veh/h	398	1532	683	401	783	675	172	772	818	384	960	901
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	24.3	21.3	30.7	22.3	21.1	33.6	23.4	20.5	29.7	20.1	20.2
Incr Delay (d2), s/veh	5.7	1.1	0.3	6.0	0.9	0.5	12.6	0.2	1.2	6.0	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.5	1.1	2.4	3.3	1.7	1.1	0.8	3.7	3.0	2.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	25.5	21.6	36.7	23.3	21.6	46.2	23.6	21.7	35.7	20.6	20.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		793			501			391			559	
Approach Delay, s/veh		26.6			26.3			25.2			25.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	23.8	7.9	27.0	11.4	24.9	14.3	20.6
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 18	32.4	* 7.7	40.6	* 18	32.5	* 17	31.0
Max Q Clear Time (g_c+I1), s	7.6	13.6	4.2	9.0	6.5	10.5	9.2	13.0
Green Ext Time (p_c), s	0.2	4.2	0.0	2.6	0.2	1.8	0.3	1.2

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

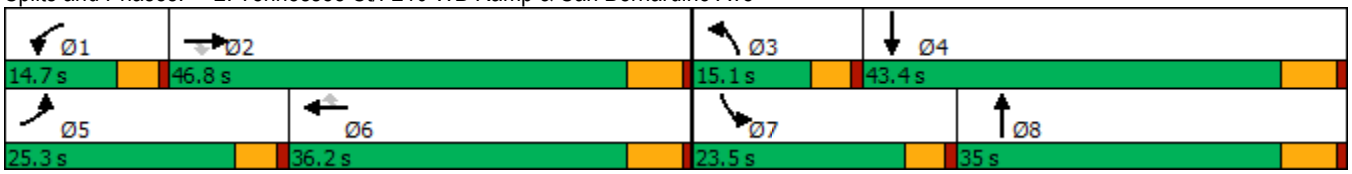
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	482	137	25	320	160	56	384	37	184	12	110
Future Volume (vph)	393	482	137	25	320	160	56	384	37	184	12	110
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.987			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			198		8			113	
Link Speed (mph)		30			40			35			30	
Link Distance (ft)		720			275			1384			996	
Travel Time (s)		16.4			4.7			27.0			22.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	3%	2%	2%	3%	4%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	405	497	141	26	330	165	58	396	38	190	12	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	405	497	141	26	330	165	58	434	0	190	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												

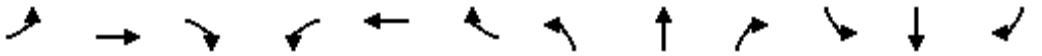
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	25.3	46.8	46.8	14.7	36.2	36.2	15.1	35.0		23.5	43.4	
Total Split (%)	21.1%	39.0%	39.0%	12.3%	30.2%	30.2%	12.6%	29.2%		19.6%	36.2%	
Maximum Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	29.0		18.8	37.4	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	18.4	39.4	39.4	10.3	24.0	24.0	10.5	18.7		16.4	28.8	
Actuated g/C Ratio	0.18	0.40	0.40	0.10	0.24	0.24	0.11	0.19		0.16	0.29	
v/c Ratio	0.76	0.71	0.21	0.16	0.78	0.32	0.35	0.69		0.74	0.25	
Control Delay	50.8	35.5	4.1	49.9	50.9	4.3	53.9	44.6		60.2	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.8	35.5	4.1	49.9	50.9	4.3	53.9	44.6		60.2	8.9	
LOS	D	D	A	D	D	A	D	D		E	A	
Approach Delay		37.2			36.1			45.7			39.8	
Approach LOS		D			D			D			D	
90th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	26.0		18.8	34.4	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
70th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	21.6		18.8	30.0	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	20.6	36.9	36.9	10.0	26.3	26.3	10.0	19.3		18.8	28.1	
50th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Min	Gap		Max	Hold	
30th %ile Green (s)	17.2	42.5	42.5	0.0	20.6	20.6	10.0	16.0		15.2	21.2	
30th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Min	Gap		Gap	Hold	
10th %ile Green (s)	12.9	32.2	32.2	0.0	14.6	14.6	0.0	12.0		10.9	27.6	
10th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	347	386	13	24	283	10	51	367		159	22	
Fuel Used(gal)	8	8	1	1	8	1	2	11		5	1	
CO Emissions (g/hr)	572	581	67	44	549	78	109	754		319	90	
NOx Emissions (g/hr)	111	113	13	9	107	15	21	147		62	17	
VOC Emissions (g/hr)	133	135	15	10	127	18	25	175		74	21	
Dilemma Vehicles (#)	0	0	0	0	14	0	0	15		0	0	
Queue Length 50th (ft)	134	305	0	17	209	0	38	145		123	6	
Queue Length 95th (ft)	#223	#506	35	48	336	33	86	207		#248	52	
Internal Link Dist (ft)		640			195			1304			916	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	617	752	722	164	547	600	169	1000		305	638	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.66	0.66	0.20	0.16	0.60	0.28	0.34	0.43		0.62	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 99.6			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 76.8%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 117			
70th %ile Actuated Cycle: 112.6			
50th %ile Actuated Cycle: 106.4			
30th %ile Actuated Cycle: 90.4			
10th %ile Actuated Cycle: 71.8			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	482	137	25	320	160	56	384	37	184	12	110
Future Volume (veh/h)	393	482	137	25	320	160	56	384	37	184	12	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1758	1673	1758	1758	1660	1772	1772	1660	1744	1716
Adj Flow Rate, veh/h	405	497	141	26	330	165	58	396	38	190	12	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	3	2	3	3	3	2	2	3	4	6
Cap, veh/h	501	615	517	88	405	343	146	548	52	228	33	310
Arrive On Green	0.17	0.35	0.35	0.06	0.23	0.23	0.09	0.18	0.18	0.14	0.23	0.23
Sat Flow, veh/h	2910	1772	1490	1594	1758	1490	1581	3105	296	1581	144	1356
Grp Volume(v), veh/h	405	497	141	26	330	165	58	214	220	190	0	125
Grp Sat Flow(s),veh/h/ln	1455	1772	1490	1594	1758	1490	1581	1683	1719	1581	0	1500
Q Serve(g_s), s	10.3	19.7	5.3	1.2	13.7	7.4	2.7	9.3	9.4	9.0	0.0	5.4
Cycle Q Clear(g_c), s	10.3	19.7	5.3	1.2	13.7	7.4	2.7	9.3	9.4	9.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.90
Lane Grp Cap(c), veh/h	501	615	517	88	405	343	146	297	303	228	0	343
V/C Ratio(X)	0.81	0.81	0.27	0.29	0.82	0.48	0.40	0.72	0.73	0.83	0.00	0.36
Avail Cap(c_a), veh/h	776	935	786	206	687	582	213	632	645	385	0	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	22.9	18.2	35.1	28.2	25.7	33.1	30.0	30.1	32.2	0.0	25.1
Incr Delay (d2), s/veh	3.6	3.1	0.3	1.8	4.0	1.0	1.8	3.3	3.3	7.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.2	1.7	0.5	5.8	2.6	1.1	3.8	4.0	3.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	26.0	18.5	36.9	32.2	26.8	34.8	33.3	33.4	39.9	0.0	25.8
LnGrp LOS	C	C	B	D	C	C	C	C	C	D	A	C
Approach Vol, veh/h		1043			521			492			315	
Approach Delay, s/veh		28.3			30.7			33.5			34.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	32.8	11.8	23.7	18.0	23.8	15.8	19.6
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 10	40.8	* 10	37.4	* 21	30.2	* 19	29.0
Max Q Clear Time (g_c+I1), s	3.2	21.7	4.7	7.4	12.3	15.7	11.0	11.4
Green Ext Time (p_c), s	0.0	3.6	0.0	0.8	1.0	2.1	0.3	2.3

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	4	473	17	6	168
Future Vol, veh/h	13	4	473	17	6	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	4	514	18	7	183

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	720	523	0	0	532	0
Stage 1	523	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	395	554	-	-	1036	-
Stage 1	595	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	392	554	-	-	1036	-
Mov Cap-2 Maneuver	392	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.9	0	0.3
HCM LOS	B		

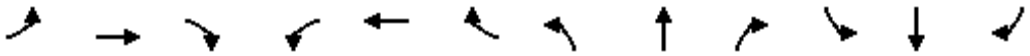
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	421	1036	-
HCM Lane V/C Ratio	-	-	0.044	0.006	-
HCM Control Delay (s)	-	-	13.9	8.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	4	473	17	6	168
Future Volume (vph)	13	4	473	17	6	168
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		100	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.970		0.995			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1648	0	1756	0	1676	1765
Flt Permitted	0.963				0.950	
Satd. Flow (perm)	1648	0	1756	0	1676	1765
Link Speed (mph)	30		35			35
Link Distance (ft)	755		1312			1384
Travel Time (s)	17.2		25.6			27.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	14	4	514	18	7	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	532	0	7	183
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	784	404	151	452	117	301	309	265	89	83	9
Future Volume (vph)	64	784	404	151	452	117	301	309	265	89	83	9
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		0.99				0.99			0.98
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1701	0	1583	1765	1471	1583	1748	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1470	1583	1701	0	1583	1765	1449	1583	1748	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			302		15				241			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1312	
Travel Time (s)		5.9			8.2			12.9			25.6	
Confl. Peds. (#/hr)			8			3			3			3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	808	416	156	466	121	310	319	273	92	86	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	808	416	156	587	0	310	319	273	92	86	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

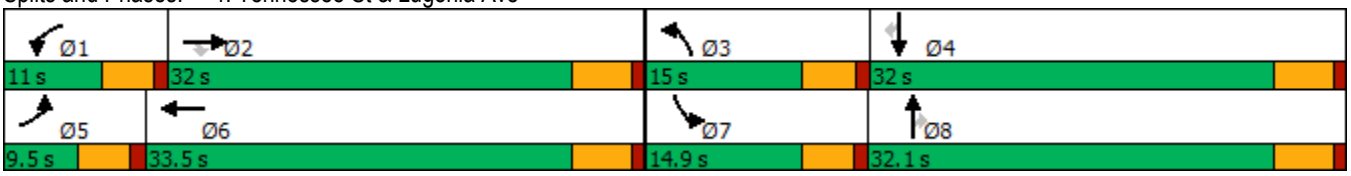


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.5	32.0	32.0	11.0	33.5		15.0	32.1	32.1	14.9	32.0	32.0
Total Split (%)	10.6%	35.6%	35.6%	12.2%	37.2%		16.7%	35.7%	35.7%	16.6%	35.6%	35.6%
Maximum Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		8	8		3			3	3		3	3
Act Effct Green (s)	5.3	25.4	25.4	6.8	30.0		11.2	19.6	19.6	9.0	17.6	17.6
Actuated g/C Ratio	0.07	0.33	0.33	0.09	0.39		0.14	0.25	0.25	0.12	0.23	0.23
v/c Ratio	0.62	0.74	0.61	1.12	0.88		1.36	0.72	0.50	0.50	0.22	0.02
Control Delay	67.2	29.9	11.8	153.2	43.9		221.3	37.3	8.7	46.2	25.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	29.9	11.8	153.2	43.9		221.3	37.3	8.7	46.2	25.9	0.1
LOS	E	C	B	F	D		F	D	A	D	C	A
Approach Delay		26.0			66.8			91.9			34.6	
Approach LOS		C			E			F			C	
90th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
90th %ile Term Code	Max	Max	Max	Max	Max		Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	25.3	25.3	10.4	25.2	25.2
70th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	20.9	20.9	10.1	20.5	20.5
50th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
30th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	16.5	16.5	8.3	14.3	14.3
30th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
10th %ile Green (s)	0.0	17.5	17.5	6.5	28.5		10.9	10.4	10.4	0.0	0.0	0.0
10th %ile Term Code	Skip	Hold	Hold	Max	Max		Hold	Gap	Gap	Skip	Skip	Skip
Stops (vph)	52	652	112	100	416		198	263	48	79	60	0
Fuel Used(gal)	2	16	4	6	11		18	8	4	2	2	0
CO Emissions (g/hr)	123	1101	309	431	761		1277	533	256	159	117	6
NOx Emissions (g/hr)	24	214	60	84	148		248	104	50	31	23	1
VOC Emissions (g/hr)	29	255	72	100	176		296	124	59	37	27	1
Dilemma Vehicles (#)	0	45	0	0	32		0	15	0	0	4	0
Queue Length 50th (ft)	35	196	43	~104	297		~233	153	13	46	36	0
Queue Length 95th (ft)	#110	294	149	#239	#574		#420	242	74	99	72	0
Internal Link Dist (ft)		269			341			583			1232	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	107	1227	729	139	666		228	648	685	223	640	620

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.66	0.57	1.12	0.88		1.36	0.49	0.40	0.41	0.13	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 77.6			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.36			
Intersection Signal Delay: 55.3		Intersection LOS: E	
Intersection Capacity Utilization 77.6%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 88.2			
50th %ile Actuated Cycle: 83.5			
30th %ile Actuated Cycle: 77.3			
10th %ile Actuated Cycle: 48.9			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: Tennessee St & Lugonia Ave

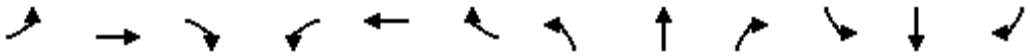


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	784	404	151	452	117	301	309	265	89	83	9
Future Volume (veh/h)	64	784	404	151	452	117	301	309	265	89	83	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1744	1673	1758	1772
Adj Flow Rate, veh/h	66	808	416	156	466	121	310	319	273	92	86	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	4	2	3	2
Cap, veh/h	81	1132	501	143	508	132	230	426	354	115	295	250
Arrive On Green	0.05	0.34	0.34	0.09	0.38	0.38	0.14	0.24	0.24	0.07	0.17	0.17
Sat Flow, veh/h	1594	3367	1491	1594	1355	352	1594	1772	1472	1594	1758	1488
Grp Volume(v), veh/h	66	808	416	156	0	587	310	319	273	92	86	9
Grp Sat Flow(s),veh/h/ln	1594	1683	1491	1594	0	1707	1594	1772	1472	1594	1758	1488
Q Serve(g_s), s	3.0	15.2	18.7	6.5	0.0	23.8	10.5	12.1	12.6	4.1	3.1	0.4
Cycle Q Clear(g_c), s	3.0	15.2	18.7	6.5	0.0	23.8	10.5	12.1	12.6	4.1	3.1	0.4
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	1132	501	143	0	640	230	426	354	115	295	250
V/C Ratio(X)	0.82	0.71	0.83	1.09	0.00	0.92	1.35	0.75	0.77	0.80	0.29	0.04
Avail Cap(c_a), veh/h	110	1252	554	143	0	670	230	661	549	228	654	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	21.0	22.2	33.1	0.0	21.6	31.1	25.5	25.7	33.2	26.4	25.3
Incr Delay (d2), s/veh	27.9	1.7	9.5	102.6	0.0	17.1	181.5	2.7	3.6	12.1	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.6	7.2	6.5	0.0	11.5	15.4	5.1	4.4	1.9	1.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	22.8	31.6	135.7	0.0	38.7	212.5	28.2	29.3	45.3	27.0	25.4
LnGrp LOS	E	C	C	F	A	D	F	C	C	D	C	C
Approach Vol, veh/h		1290			743			902			187	
Approach Delay, s/veh		27.7			59.1			91.9			35.9	
Approach LOS		C			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	29.4	15.0	17.2	8.2	32.2	9.7	22.5
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	6.5	27.0	10.5	27.0	5.0	28.5	10.4	27.1
Max Q Clear Time (g_c+I1), s	8.5	20.7	12.5	5.1	5.0	25.8	6.1	14.6
Green Ext Time (p_c), s	0.0	3.5	0.0	0.4	0.0	1.0	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	54.2
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	119	3	231	223	732	0	0	530	136
Future Volume (vph)	0	0	0	119	3	231	223	732	0	0	530	136
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.902						0.969	
Flt Protected					0.983		0.950					
Satd. Flow (prot)	0	0	0	0	2953	0	1568	3353	0	0	3249	0
Flt Permitted					0.983		0.950					
Satd. Flow (perm)	0	0	0	0	2953	0	1568	3353	0	0	3249	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					243						38	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1063			612			817	
Travel Time (s)		19.4			24.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	125	3	243	235	771	0	0	558	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	371	0	235	771	0	0	701	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (ft)				20	100		20	100			100	
Trailing Detector (ft)				0	0		0	0			0	
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4								
Detector Phase				4	4		1	6			2	
Switch Phase												



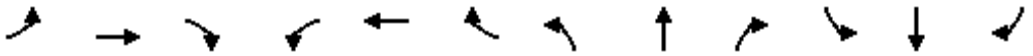
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				24.0	24.0		30.0	66.0			36.0	
Total Split (%)				26.7%	26.7%		33.3%	73.3%			40.0%	
Maximum Green (s)				18.5	18.5		25.0	60.5			30.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								1				
Act Effct Green (s)					10.0		18.6	69.0			45.4	
Actuated g/C Ratio					0.11		0.21	0.77			0.50	
v/c Ratio					0.68		0.73	0.30			0.42	
Control Delay					19.8		43.0	1.1			15.9	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					19.8		43.0	1.1			15.9	
LOS					B		D	A			B	
Approach Delay					19.8			10.9			15.9	
Approach LOS					B			B			B	
90th %ile Green (s)				15.5	15.5		25.3	63.5			33.2	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				11.7	11.7		21.5	67.3			40.8	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				9.6	9.6		18.7	69.4			45.7	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				7.5	7.5		15.8	71.5			50.7	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				5.5	5.5		11.7	73.5			56.8	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					120		183	72			396	
Fuel Used(gal)					5		4	4			12	
CO Emissions (g/hr)					350		302	275			857	
NOx Emissions (g/hr)					68		59	54			167	
VOC Emissions (g/hr)					81		70	64			199	
Dilemma Vehicles (#)					0		0	22			37	
Queue Length 50th (ft)					36		112	13			117	
Queue Length 95th (ft)					75		m105	m18			212	
Internal Link Dist (ft)		775			983			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					800		436	2572			1659	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.46		0.54	0.30			0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 49 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 83.7%		ICU Level of Service E	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Tennessee St & I-10 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	119	3	231	223	732	0	0	530	136
Future Volume (veh/h)	0	0	0	119	3	231	223	732	0	0	530	136
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1744	1772	1772	1660	1772	0	0	1772	1772
Adj Flow Rate, veh/h				125	3	243	235	771	0	0	558	143
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				4	2	2	3	2	0	0	2	2
Cap, veh/h				306	7	278	265	2331	0	0	1246	318
Arrive On Green				0.19	0.19	0.19	0.34	1.00	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1650	40	1502	1581	3455	0	0	2744	678
Grp Volume(v), veh/h				128	0	243	235	771	0	0	353	348
Grp Sat Flow(s),veh/h/ln				1689	0	1502	1581	1683	0	0	1683	1650
Q Serve(g_s), s				6.0	0.0	14.2	12.7	0.0	0.0	0.0	12.7	12.8
Cycle Q Clear(g_c), s				6.0	0.0	14.2	12.7	0.0	0.0	0.0	12.7	12.8
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.41
Lane Grp Cap(c), veh/h				313	0	278	265	2331	0	0	790	774
V/C Ratio(X)				0.41	0.00	0.87	0.89	0.33	0.00	0.00	0.45	0.45
Avail Cap(c_a), veh/h				347	0	309	439	2331	0	0	790	774
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.48	0.48	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.3	0.0	35.6	29.1	0.0	0.0	0.0	16.0	16.1
Incr Delay (d2), s/veh				0.9	0.0	21.5	6.2	0.2	0.0	0.0	1.8	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	6.7	4.2	0.1	0.0	0.0	4.9	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.2	0.0	57.2	35.3	0.2	0.0	0.0	17.9	17.9
LnGrp LOS				C	A	E	D	A	A	A	B	B
Approach Vol, veh/h					371			1006			701	
Approach Delay, s/veh					48.9			8.4			17.9	
Approach LOS					D			A			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.1	47.7		22.2		67.8						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	25.0	30.5		18.5		60.5						
Max Q Clear Time (g_c+I1), s	14.7	14.8		16.2		2.0						
Green Ext Time (p_c), s	0.5	3.8		0.5		6.2						

Intersection Summary												
HCM 6th Ctrl Delay			18.8									
HCM 6th LOS			B									

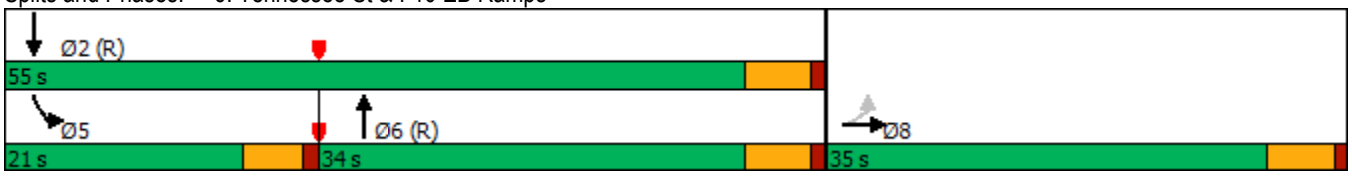
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	348	354	0	0	0	0	621	149	239	410	0
Future Volume (vph)	334	348	354	0	0	0	0	621	149	239	410	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.949						0.971				
Flt Protected		0.984								0.950		
Satd. Flow (prot)	0	3121	0	0	0	0	0	3256	0	1583	3320	0
Flt Permitted		0.984								0.950		
Satd. Flow (perm)	0	3121	0	0	0	0	0	3256	0	1583	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110						34				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	352	366	373	0	0	0	0	654	157	252	432	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1091	0	0	0	0	0	811	0	252	432	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	35.0	35.0						34.0		21.0	55.0	
Total Split (%)	38.9%	38.9%						37.8%		23.3%	61.1%	
Maximum Green (s)	29.5	29.5						28.5		16.0	49.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		31.3						26.9		15.8	47.7	
Actuated g/C Ratio		0.35						0.30		0.18	0.53	
v/c Ratio		0.94						0.81		0.91	0.25	
Control Delay		43.3						35.2		63.6	15.1	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		43.3						35.2		63.6	15.1	
LOS		D						D		E	B	
Approach Delay		43.3						35.2			33.0	
Approach LOS		D						D			C	
90th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
90th %ile Term Code	Max	Max						Coord		Max	Coord	
70th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
70th %ile Term Code	Max	Max						Coord		Max	Coord	
50th %ile Green (s)	30.0	30.0						28.0		16.0	49.0	
50th %ile Term Code	Max	Max						Coord		Max	Coord	
30th %ile Green (s)	32.3	32.3						25.7		16.0	46.7	
30th %ile Term Code	Max	Max						Coord		Max	Coord	
10th %ile Green (s)	35.2	35.2						23.9		14.9	43.8	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		809						666		208	284	
Fuel Used(gal)		23						14		6	5	
CO Emissions (g/hr)		1636						964		400	364	
NOx Emissions (g/hr)		318						188		78	71	
VOC Emissions (g/hr)		379						223		93	84	
Dilemma Vehicles (#)		0						43		0	19	
Queue Length 50th (ft)		293						211		146	108	
Queue Length 95th (ft)		#446						280		#281	48	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1156						1054		281	1826	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.94						0.77		0.90	0.24	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 87.5 (97%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 38.0		Intersection LOS: D	
Intersection Capacity Utilization 83.7%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

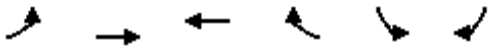
Splits and Phases: 6: Tennessee St & I-10 EB Ramps



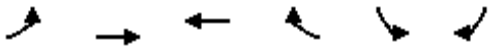
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	348	354	0	0	0	0	621	149	239	410	0
Future Volume (veh/h)	334	348	354	0	0	0	0	621	149	239	410	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1772	1772				0	1772	1772	1673	1758	0
Adj Flow Rate, veh/h	352	366	373				0	654	157	252	432	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2				0	2	2	2	3	0
Cap, veh/h	332	357	386				0	853	205	283	1837	0
Arrive On Green	0.33	0.33	0.33				0.00	0.32	0.32	0.06	0.18	0.00
Sat Flow, veh/h	1014	1088	1179				0	2782	646	1594	3428	0
Grp Volume(v), veh/h	598	0	493				0	408	403	252	432	0
Grp Sat Flow(s),veh/h/ln	1721	0	1560				0	1683	1656	1594	1670	0
Q Serve(g_s), s	29.5	0.0	28.0				0.0	19.7	19.8	14.1	10.0	0.0
Cycle Q Clear(g_c), s	29.5	0.0	28.0				0.0	19.7	19.8	14.1	10.0	0.0
Prop In Lane	0.59		0.76				0.00		0.39	1.00		0.00
Lane Grp Cap(c), veh/h	564	0	511				0	533	524	283	1837	0
V/C Ratio(X)	1.06	0.00	0.97				0.00	0.77	0.77	0.89	0.24	0.00
Avail Cap(c_a), veh/h	564	0	511				0	533	524	283	1837	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	30.3	0.0	29.7				0.0	27.7	27.8	41.5	20.6	0.0
Incr Delay (d2), s/veh	54.5	0.0	31.0				0.0	10.1	10.3	25.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.2	0.0	14.4				0.0	9.0	8.9	8.0	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.8	0.0	60.7				0.0	37.8	38.1	66.9	20.9	0.0
LnGrp LOS	F	A	E				A	D	D	E	C	A
Approach Vol, veh/h		1091						811			684	
Approach Delay, s/veh		73.9						38.0			37.9	
Approach LOS		E						D			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		55.0			21.0	34.0		35.0				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		49.5			16.0	28.5		29.5				
Max Q Clear Time (g_c+I1), s		12.0			16.1	21.8		31.5				
Green Ext Time (p_c), s		3.0			0.0	2.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		53.1	
HCM 6th LOS		D	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	62	748	464	298	504	129
Future Volume (vph)	62	748	464	298	504	129
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.941			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3353	3155	0	2891	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3353	3155	0	2891	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			310			134
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	65	779	483	310	525	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	779	793	0	525	134
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



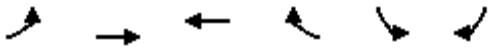
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	42.0	33.0		18.0	18.0
Total Split (%)	15.0%	70.0%	55.0%		30.0%	30.0%
Maximum Green (s)	4.2	35.7	26.7		13.2	13.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)			7.0			
Flash Dont Walk (s)			19.0			
Pedestrian Calls (#/hr)			6			
Act Effct Green (s)	4.5	20.7	16.1		12.2	12.2
Actuated g/C Ratio	0.10	0.46	0.36		0.27	0.27
v/c Ratio	0.41	0.50	0.59		0.67	0.26
Control Delay	34.9	9.0	9.3		22.7	6.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	34.9	9.0	9.3		22.7	6.0
LOS	C	A	A		C	A
Approach Delay		11.0	9.3		19.3	
Approach LOS		B	A		B	
90th %ile Green (s)	4.2	35.0	26.0		13.2	13.2
90th %ile Term Code	Max	Hold	Ped		Max	Max
70th %ile Green (s)	4.2	27.0	18.0		13.2	13.2
70th %ile Term Code	Max	Hold	Gap		Max	Max
50th %ile Green (s)	4.2	23.8	14.8		13.2	13.2
50th %ile Term Code	Max	Hold	Gap		Max	Max
30th %ile Green (s)	0.0	13.1	13.1		10.9	10.9
30th %ile Term Code	Skip	Gap	Hold		Gap	Gap
10th %ile Green (s)	0.0	9.9	9.9		8.9	8.9
10th %ile Term Code	Skip	Gap	Hold		Gap	Gap
Stops (vph)	53	432	336		392	25
Fuel Used(gal)	2	19	9		15	3
CO Emissions (g/hr)	142	1298	641		1041	196
NOx Emissions (g/hr)	28	253	125		202	38
VOC Emissions (g/hr)	33	301	149		241	45
Dilemma Vehicles (#)	0	63	69		0	0
Queue Length 50th (ft)	18	67	56		66	0
Queue Length 95th (ft)	#73	98	98		#164	36
Internal Link Dist (ft)		2474	430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	158	2709	2119		908	563

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.29	0.37		0.58	0.24

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 59.3			
70th %ile Actuated Cycle: 51.3			
50th %ile Actuated Cycle: 48.1			
30th %ile Actuated Cycle: 35.1			
10th %ile Actuated Cycle: 29.9			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr





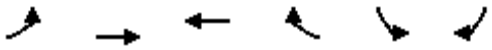
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	748	464	298	504	129
Future Volume (veh/h)	62	748	464	298	504	129
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1575	1772
Adj Flow Rate, veh/h	65	779	483	310	525	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	75	1721	699	447	687	355
Arrive On Green	0.05	0.51	0.35	0.35	0.24	0.24
Sat Flow, veh/h	1594	3455	2058	1259	2910	1502
Grp Volume(v), veh/h	65	779	413	380	525	134
Grp Sat Flow(s),veh/h/ln	1594	1683	1683	1545	1455	1502
Q Serve(g_s), s	1.8	6.5	9.2	9.3	7.4	3.3
Cycle Q Clear(g_c), s	1.8	6.5	9.2	9.3	7.4	3.3
Prop In Lane	1.00			0.81	1.00	1.00
Lane Grp Cap(c), veh/h	75	1721	597	548	687	355
V/C Ratio(X)	0.86	0.45	0.69	0.69	0.76	0.38
Avail Cap(c_a), veh/h	152	2735	1023	939	874	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	6.8	12.1	12.1	15.6	14.1
Incr Delay (d2), s/veh	23.8	0.2	1.4	1.6	3.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	2.7	2.5	2.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	7.0	13.5	13.7	18.7	14.7
LnGrp LOS	D	A	B	B	B	B
Approach Vol, veh/h		844	793		659	
Approach Delay, s/veh		9.9	13.6		17.9	
Approach LOS		A	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.8		15.2	6.9	21.9
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 36		* 13	* 4.2	* 27
Max Q Clear Time (g_c+I1), s		8.5		9.4	3.8	11.3
Green Ext Time (p_c), s		5.5		1.0	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1233	711	0	4	32
Future Volume (vph)	0	1233	711	0	4	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			100	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.879	
Flt Protected					0.995	
Satd. Flow (prot)	0	4818	3353	0	1543	0
Flt Permitted					0.995	
Satd. Flow (perm)	0	4818	3353	0	1543	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		230	480		362	
Travel Time (s)		4.5	9.4		8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1340	773	0	4	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1340	773	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes				
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

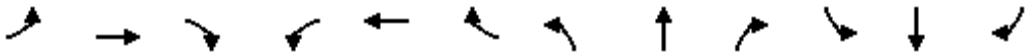
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↱	
Traffic Vol, veh/h	0	1233	711	0	4	32
Future Vol, veh/h	0	1233	711	0	4	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1340	773	0	4	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	1309	387
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	536	-
Critical Hdwy	-	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	0	-	-	0	180	611
Stage 1	0	-	-	0	405	-
Stage 2	0	-	-	0	518	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	180	611
Mov Cap-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	405	-
Stage 2	-	-	-	-	518	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	543
HCM Lane V/C Ratio	-	-	0.072
HCM Control Delay (s)	-	-	12.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	965	162	40	510	21	169	7	58	8	5	32
Future Volume (vph)	110	965	162	40	510	21	169	7	58	8	5	32
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97									
Frt			0.850		0.994			0.967			0.904	
Flt Protected	0.950			0.950				0.965			0.991	
Satd. Flow (prot)	1676	3353	1485	1568	3333	0	0	1647	0	0	1581	0
Flt Permitted	0.432			0.950				0.755			0.937	
Satd. Flow (perm)	762	3353	1448	1568	3333	0	0	1288	0	0	1495	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178		10			20			35	
Link Speed (mph)		35			35			40			30	
Link Distance (ft)		480			320			976			370	
Travel Time (s)		9.4			6.2			16.6			8.4	
Confl. Peds. (#/hr)			2									
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	120	1060	178	44	560	23	186	8	64	9	5	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1060	178	44	583	0	0	258	0	0	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	15.0	10.0	15.0		5.0	5.0		15.0	15.0	
Minimum Split (s)	23.3	23.3	23.3	15.0	23.3		22.5	22.5		22.5	22.5	
Total Split (s)	41.0	41.0	41.0	15.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	51.3%	51.3%	51.3%	18.8%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
Yellow Time (s)	4.3	4.3	4.3	4.0	4.3		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.0	5.3			4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0				11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	2	2	2				0	0		0	0	
Act Effct Green (s)	28.9	28.9	28.9	10.9	36.3			18.5			18.5	
Actuated g/C Ratio	0.44	0.44	0.44	0.17	0.55			0.28			0.28	
v/c Ratio	0.36	0.72	0.24	0.17	0.31			0.68			0.11	
Control Delay	17.8	19.1	3.4	32.6	7.4			35.1			12.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	17.8	19.1	3.4	32.6	7.4			35.1			12.6	
LOS	B	B	A	C	A			D			B	
Approach Delay		16.9			9.1			35.1			12.6	
Approach LOS		B			A			D			B	
90th %ile Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
90th %ile Term Code	Max	Max	Max	Max	Hold		Max	Max		Hold	Hold	
70th %ile Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
70th %ile Term Code	Max	Max	Max	Max	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	35.1	35.1	35.1	10.0	50.1		19.5	19.5		19.5	19.5	
50th %ile Term Code	Gap	Gap	Gap	Max	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	22.0	22.0	22.0	0.0	22.0		15.0	15.0		15.0	15.0	
30th %ile Term Code	Gap	Gap	Gap	Skip	Hold		Hold	Hold		Hold	Hold	
10th %ile Green (s)	16.7	16.7	16.7	0.0	16.7		15.0	15.0		15.0	15.0	
10th %ile Term Code	Gap	Gap	Gap	Skip	Hold		Hold	Hold		Hold	Hold	
Stops (vph)	68	716	17	36	229			172			17	
Fuel Used(gal)	1	12	1	1	4			5			0	
CO Emissions (g/hr)	90	873	56	44	262			344			24	
NOx Emissions (g/hr)	18	170	11	9	51			67			5	
VOC Emissions (g/hr)	21	202	13	10	61			80			5	
Dilemma Vehicles (#)	0	62	0	0	29			15			0	
Queue Length 50th (ft)	38	217	0	20	58			110			5	
Queue Length 95th (ft)	81	288	33	50	83			#234			31	
Internal Link Dist (ft)		400			240			896			290	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	452	1988	931	260	2605			430			507	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.27	0.53	0.19	0.17	0.22			0.60			0.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 65.5			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 69.5%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 80			
70th %ile Actuated Cycle: 80			
50th %ile Actuated Cycle: 79.4			
30th %ile Actuated Cycle: 46.8			
10th %ile Actuated Cycle: 41.5			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

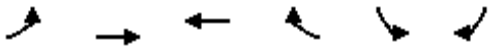
Splits and Phases: 9: New York St/Proj Drwy & Lugonia Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	965	162	40	510	21	169	7	58	8	5	32
Future Volume (veh/h)	110	965	162	40	510	21	169	7	58	8	5	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1758	1660	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	120	1060	178	44	560	23	186	8	64	9	5	35
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	3	3	2	2	2	2	2	2	2	2
Cap, veh/h	475	1451	640	136	1971	81	342	21	87	107	72	274
Arrive On Green	0.43	0.43	0.43	0.09	0.60	0.60	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	832	3367	1486	1581	3296	135	995	87	357	157	295	1130
Grp Volume(v), veh/h	120	1060	178	44	286	297	258	0	0	49	0	0
Grp Sat Flow(s),veh/h/ln	832	1683	1486	1581	1683	1748	1438	0	0	1583	0	0
Q Serve(g_s), s	5.9	16.1	4.8	1.6	5.1	5.1	8.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.9	16.1	4.8	1.6	5.1	5.1	10.1	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	0.72		0.25	0.18		0.71
Lane Grp Cap(c), veh/h	475	1451	640	136	1007	1045	450	0	0	453	0	0
V/C Ratio(X)	0.25	0.73	0.28	0.32	0.28	0.28	0.57	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	600	1954	863	257	1388	1440	554	0	0	564	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	14.5	11.3	26.4	6.0	6.0	21.3	0.0	0.0	18.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.9	0.2	1.4	0.2	0.1	1.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.3	1.4	0.6	1.3	1.4	3.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	15.5	11.6	27.8	6.1	6.1	22.5	0.0	0.0	18.3	0.0	0.0
LnGrp LOS	B	B	B	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		1358			627			258			49	
Approach Delay, s/veh		14.7			7.7			22.5			18.3	
Approach LOS		B			A			C			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.3	31.8		19.4		42.1		19.4				
Change Period (Y+Rc), s	5.0	5.3		4.5		5.3		4.5				
Max Green Setting (Gmax), s	10.0	35.7		19.5		50.7		19.5				
Max Q Clear Time (g_c+I1), s	3.6	18.1		3.5		7.1		12.1				
Green Ext Time (p_c), s	0.0	8.4		0.2		3.8		0.8				

Intersection Summary			
HCM 6th Ctrl Delay		13.7	
HCM 6th LOS		B	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	941	540	9	4	31
Future Volume (vph)	90	941	540	9	4	31
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.880	
Flt Protected	0.950				0.995	
Satd. Flow (prot)	1583	3353	1761	0	1545	0
Flt Permitted	0.950				0.995	
Satd. Flow (perm)	1583	3353	1761	0	1545	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	97	1012	581	10	4	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	1012	591	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	90	941	540	9	4	31
Future Vol, veh/h	90	941	540	9	4	31
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	1012	581	10	4	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	592	0	-	0	1287	587
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	700	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	982	-	-	-	168	509
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	455	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	981	-	-	-	151	509
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	455	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	981	-	-	-	400
HCM Lane V/C Ratio	0.099	-	-	-	0.094
HCM Control Delay (s)	9.1	-	-	-	14.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	23	0	2	0	14	53	2	7	0
Future Volume (vph)	0	0	0	23	0	2	0	14	53	2	7	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.988			0.893				
Flt Protected					0.957						0.988	
Satd. Flow (prot)	0	1765	0	0	1685	0	0	1591	0	0	1761	0
Flt Permitted					0.957						0.988	
Satd. Flow (perm)	0	1765	0	0	1685	0	0	1591	0	0	1761	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		331			965			1320			300	
Travel Time (s)		7.5			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	1%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	30	0	3	0	18	69	3	9	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	33	0	0	87	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	23	0	2	0	14	53	2	7	0
Future Vol, veh/h	0	0	0	23	0	2	0	14	53	2	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	1	2	1	2	1	1	1	1	2
Mvmt Flow	0	0	0	30	0	3	0	18	69	3	9	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	1	0	0	-	64	1	107	63	-
Stage 1	-	-	-	-	-	-	-	1	-	62	62	-
Stage 2	-	-	-	-	-	-	-	63	-	45	1	-
Critical Hdwy	4.12	-	-	4.11	-	-	-	6.51	6.21	7.11	6.51	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	-	4.009	3.309	3.509	4.009	-
Pot Cap-1 Maneuver	1619	-	-	1628	-	-	0	829	1087	875	830	0
Stage 1	-	-	-	-	-	-	0	897	-	952	845	0
Stage 2	-	-	-	-	-	-	0	844	-	971	897	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1619	-	-	1628	-	-	-	814	1087	795	815	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	814	-	795	815	-
Stage 1	-	-	-	-	-	-	-	897	-	952	830	-
Stage 2	-	-	-	-	-	-	-	829	-	891	897	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	6.7	8.9	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1016	1619	-	-	1628	-	-	810
HCM Lane V/C Ratio	0.086	-	-	-	0.018	-	-	0.014
HCM Control Delay (s)	8.9	0	-	-	7.3	0	-	9.5
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	39	11	68	16	24	7	269	89	26	190	18
Future Volume (vph)	17	39	11	68	16	24	7	269	89	26	190	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977			0.970			0.967			0.990	
Flt Protected		0.987			0.969			0.999			0.995	
Satd. Flow (prot)	0	1688	0	0	1675	0	0	1720	0	0	1756	0
Flt Permitted		0.987			0.969			0.999			0.995	
Satd. Flow (perm)	0	1688	0	0	1675	0	0	1720	0	0	1756	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	5%	1%	1%	1%	6%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	18	41	12	72	17	25	7	283	94	27	200	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	114	0	0	384	0	0	246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	39	11	68	16	24	7	269	89	26	190	18
Future Vol, veh/h	17	39	11	68	16	24	7	269	89	26	190	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	3	5	1	1	1	6	1	1	1	1	1
Mvmt Flow	18	41	12	72	17	25	7	283	94	27	200	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	9.8	12.3	10.3
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	25%	63%	11%
Vol Thru, %	74%	58%	15%	81%
Vol Right, %	24%	16%	22%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	365	67	108	234
LT Vol	7	17	68	26
Through Vol	269	39	16	190
RT Vol	89	11	24	18
Lane Flow Rate	384	71	114	246
Geometry Grp	1	1	1	1
Degree of Util (X)	0.496	0.11	0.176	0.331
Departure Headway (Hd)	4.651	5.609	5.563	4.836
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	768	642	648	734
Service Time	2.729	3.614	3.566	2.924
HCM Lane V/C Ratio	0.5	0.111	0.176	0.335
HCM Control Delay	12.3	9.3	9.8	10.3
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	2.8	0.4	0.6	1.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	780	93	86	402	12	105	259	143	18	222	40
Future Volume (vph)	72	780	93	86	402	12	105	259	143	18	222	40
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.996				0.850			0.850
Flt Protected	0.950			0.950				0.986			0.996	
Satd. Flow (prot)	1599	3332	0	1583	3341	0	0	1757	1515	0	1775	1515
Flt Permitted	0.950			0.950				0.780			0.959	
Satd. Flow (perm)	1599	3332	0	1583	3341	0	0	1390	1515	0	1709	1515
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4				78			78
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		426			523			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	76	821	98	91	423	13	111	273	151	19	234	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	919	0	91	436	0	0	384	151	0	253	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	14.7	37.0		14.0	36.3		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	16.3%	41.1%		15.6%	40.3%		43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.7	4.7		4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	8.8	26.3		8.9	26.2			26.1	26.1		26.1	26.1
Actuated g/C Ratio	0.12	0.36		0.12	0.36			0.36	0.36		0.36	0.36
v/c Ratio	0.39	0.76		0.47	0.36			0.77	0.25		0.41	0.07
Control Delay	42.3	26.7		45.4	20.1			34.7	11.4		21.9	1.6
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	42.3	26.7		45.4	20.1			34.7	11.4		21.9	1.6
LOS	D	C		D	C			C	B		C	A
Approach Delay		27.9			24.5			28.1			19.0	
Approach LOS		C			C			C			B	
90th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
90th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
70th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
50th %ile Green (s)	9.3	29.3		9.3	29.3		29.2	29.2	29.2	29.2	29.2	29.2
50th %ile Term Code	Gap	Gap		Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	7.5	23.1		8.1	23.7		21.8	21.8	21.8	21.8	21.8	21.8
30th %ile Term Code	Gap	Gap		Gap	Hold		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	0.0	13.7		0.0	13.7		12.4	12.4	12.4	12.4	12.4	12.4
10th %ile Term Code	Skip	Gap		Skip	Hold		Gap	Gap	Gap	Hold	Hold	Hold
Stops (vph)	64	702		75	276			299	48		163	2
Fuel Used(gal)	2	16		2	5			7	1		5	0
CO Emissions (g/hr)	112	1131		118	373			501	102		339	28
NOx Emissions (g/hr)	22	220		23	73			98	20		66	5
VOC Emissions (g/hr)	26	262		27	86			116	24		78	6
Dilemma Vehicles (#)	0	51		0	20			21	0		12	0
Queue Length 50th (ft)	37	212		45	84			172	25		96	0
Queue Length 95th (ft)	85	310		#107	135			295	68		166	7
Internal Link Dist (ft)		346			443			591			1254	
Turn Bay Length (ft)	105			100					50			50
Base Capacity (vph)	247	1676		228	1638			739	841		908	841

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.31	0.55		0.40	0.27			0.52	0.18		0.28	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 72.9			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 80.8%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 90			
50th %ile Actuated Cycle: 81.9			
30th %ile Actuated Cycle: 67.1			
10th %ile Actuated Cycle: 35.5			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 13: Texas St & Lugonia Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	780	93	86	402	12	105	259	143	18	222	40
Future Volume (veh/h)	72	780	93	86	402	12	105	259	143	18	222	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1673	1772	1786	1786	1786	1786	1786	1786	1786
Adj Flow Rate, veh/h	76	821	98	91	423	13	111	273	151	19	234	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	1	1	1	1	1	1	1
Cap, veh/h	95	992	118	113	1124	34	58	97	648	48	405	648
Arrive On Green	0.06	0.33	0.33	0.07	0.34	0.34	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1606	3053	364	1594	3335	102	0	226	1514	0	946	1514
Grp Volume(v), veh/h	76	456	463	91	213	223	384	0	151	253	0	42
Grp Sat Flow(s),veh/h/ln	1606	1697	1720	1594	1683	1754	226	0	1514	946	0	1514
Q Serve(g_s), s	3.7	19.9	19.9	4.5	7.7	7.7	0.0	0.0	5.1	0.0	0.0	1.3
Cycle Q Clear(g_c), s	3.7	19.9	19.9	4.5	7.7	7.7	34.3	0.0	5.1	34.3	0.0	1.3
Prop In Lane	1.00		0.21	1.00		0.06	0.29		1.00	0.08		1.00
Lane Grp Cap(c), veh/h	95	552	559	113	567	591	155	0	648	453	0	648
V/C Ratio(X)	0.80	0.83	0.83	0.80	0.38	0.38	2.48	0.00	0.23	0.56	0.00	0.06
Avail Cap(c_a), veh/h	200	684	693	185	664	691	155	0	648	453	0	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	25.0	25.0	36.7	20.2	20.2	20.0	0.0	14.6	17.4	0.0	13.5
Incr Delay (d2), s/veh	14.4	6.9	6.8	12.4	0.4	0.4	685.3	0.0	0.2	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	8.5	8.6	2.1	2.9	3.0	31.1	0.0	1.6	3.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	31.8	31.8	49.1	20.6	20.6	705.2	0.0	14.7	19.0	0.0	13.5
LnGrp LOS	D	C	C	D	C	C	F	A	B	B	A	B
Approach Vol, veh/h		995			527			535			295	
Approach Delay, s/veh		33.3			25.5			510.4			18.2	
Approach LOS		C			C			F			B	

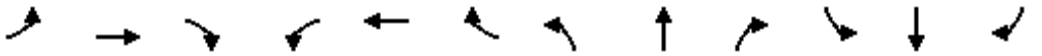
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	30.8		39.0	9.4	31.7		39.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 9.3	* 32		* 34	* 10	* 32		* 34				
Max Q Clear Time (g_c+I1), s	6.5	21.9		36.3	5.7	9.7		36.3				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	2.4		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	138.2
HCM 6th LOS	F

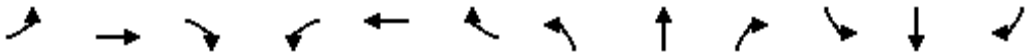
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix G:
Existing Year With Project (Scenario B) AM Peak Hour Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	274	44	65	315	244	28	4	35	195	175	150
Future Volume (vph)	59	274	44	65	315	244	28	4	35	195	175	150
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			255			113		167	
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		1161			720			1341			1495	
Travel Time (s)		26.4			16.4			26.1			34.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	7%	6%	2%	7%	3%	3%	17%	3%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	304	49	72	350	271	31	4	39	217	194	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	304	49	72	350	271	31	4	39	217	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												



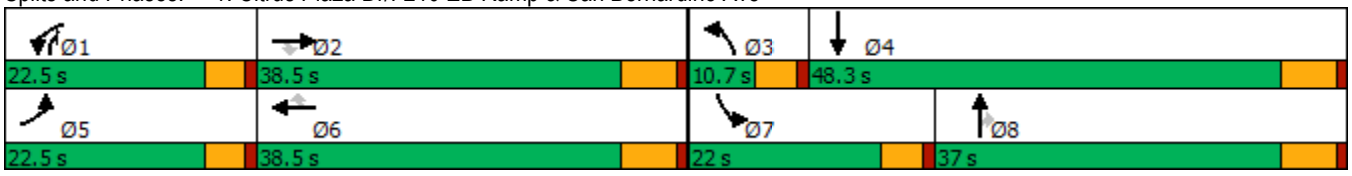
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.5	38.5	22.5	38.5	38.5	10.7	37.0	22.5	22.0	48.3	
Total Split (%)	18.8%	32.1%	32.1%	18.8%	32.1%	32.1%	8.9%	30.8%	18.8%	18.3%	40.3%	
Maximum Green (s)	17.8	32.5	32.5	17.8	32.5	32.5	6.0	31.0	17.8	17.3	42.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	8.9	20.4	20.4	9.2	20.7	20.7	6.5	6.4	11.0	18.6	15.6	
Actuated g/C Ratio	0.14	0.32	0.32	0.15	0.33	0.33	0.10	0.10	0.17	0.29	0.25	
v/c Ratio	0.30	0.29	0.09	0.31	0.64	0.41	0.19	0.03	0.11	0.47	0.41	
Control Delay	34.1	18.4	0.3	33.9	26.0	5.6	37.5	35.8	0.7	28.1	15.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.1	18.4	0.3	33.9	26.0	5.6	37.5	35.8	0.7	28.1	15.5	
LOS	C	B	A	C	C	A	D	D	A	C	B	
Approach Delay		18.8			18.8			18.0			20.2	
Approach LOS		B			B			B			C	
90th %ile Green (s)	12.3	32.1	32.1	12.7	32.5	32.5	6.0	6.5	12.7	17.3	17.8	
90th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Max	Gap	Gap	Max	Hold	
70th %ile Green (s)	10.0	25.0	25.0	10.3	25.3	25.3	6.0	0.0	10.3	24.3	12.3	
70th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Max	Skip	Gap	Hold	Gap	
50th %ile Green (s)	8.6	20.2	20.2	8.9	20.5	20.5	0.0	0.0	8.9	17.3	16.0	
50th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Max	Hold	
30th %ile Green (s)	7.2	16.1	16.1	7.4	16.3	16.3	0.0	0.0	7.4	16.7	15.4	
30th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Gap	Hold	
10th %ile Green (s)	0.0	10.5	10.5	0.0	10.5	10.5	0.0	0.0	0.0	12.8	11.5	
10th %ile Term Code	Skip	Hold	Hold	Skip	Gap	Gap	Skip	Skip	Skip	Gap	Hold	
Stops (vph)	51	181	0	56	243	32	26	7	0	145	140	
Fuel Used(gal)	1	5	0	1	5	2	1	0	1	4	6	
CO Emissions (g/hr)	86	315	28	79	334	127	66	11	47	293	391	
NOx Emissions (g/hr)	17	61	5	15	65	25	13	2	9	57	76	
VOC Emissions (g/hr)	20	73	6	18	77	30	15	3	11	68	91	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	23	43	0	25	109	4	11	1	0	67	30	
Queue Length 95th (ft)	74	96	0	78	248	57	46	13	0	#216	92	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	486	1828	892	495	962	958	165	839	581	511	2203	

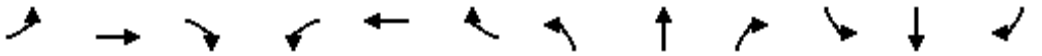
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.17	0.05	0.15	0.36	0.28	0.19	0.00	0.07	0.42	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 63.3			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 55.7%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 75			
50th %ile Actuated Cycle: 61.8			
30th %ile Actuated Cycle: 55.6			
10th %ile Actuated Cycle: 34			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	274	44	65	315	244	28	4	35	195	175	150
Future Volume (veh/h)	59	274	44	65	315	244	28	4	35	195	175	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1647	1702	1716	1673	1702	1758	1660	1561	1758	1673	1772	1744
Adj Flow Rate, veh/h	66	304	49	72	350	271	31	4	39	217	194	167
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	7	6	2	7	3	3	17	3	2	2	4
Cap, veh/h	138	893	402	140	470	412	54	137	262	272	396	322
Arrive On Green	0.09	0.28	0.28	0.09	0.28	0.28	0.03	0.09	0.09	0.17	0.22	0.22
Sat Flow, veh/h	1569	3233	1454	1594	1702	1490	1581	1561	1490	1594	1763	1434
Grp Volume(v), veh/h	66	304	49	72	350	271	31	4	39	217	185	176
Grp Sat Flow(s),veh/h/ln	1569	1617	1454	1594	1702	1490	1581	1561	1490	1594	1683	1514
Q Serve(g_s), s	2.3	4.3	1.4	2.4	10.6	9.1	1.1	0.1	1.3	7.4	5.4	5.8
Cycle Q Clear(g_c), s	2.3	4.3	1.4	2.4	10.6	9.1	1.1	0.1	1.3	7.4	5.4	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	138	893	402	140	470	412	54	137	262	272	378	340
V/C Ratio(X)	0.48	0.34	0.12	0.51	0.74	0.66	0.58	0.03	0.15	0.80	0.49	0.52
Avail Cap(c_a), veh/h	492	1852	833	500	975	853	167	853	945	486	1255	1128
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	16.4	15.4	24.7	18.7	18.2	27.0	23.7	19.8	22.6	19.2	19.3
Incr Delay (d2), s/veh	2.5	0.2	0.1	2.9	2.4	1.8	9.3	0.1	0.3	5.4	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.5	0.4	1.0	4.1	2.9	0.5	0.0	0.4	3.0	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	16.6	15.5	27.6	21.1	20.0	36.3	23.7	20.0	28.0	20.2	20.5
LnGrp LOS	C	B	B	C	C	B	D	C	C	C	C	C
Approach Vol, veh/h		419			693			74			578	
Approach Delay, s/veh		18.2			21.3			27.1			23.2	
Approach LOS		B			C			C			C	

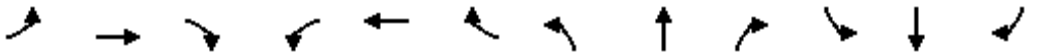
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	21.7	6.6	18.7	9.7	21.7	14.4	11.0
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 18	32.5	* 6	42.3	* 18	32.5	* 17	31.0
Max Q Clear Time (g_c+I1), s	4.4	6.3	3.1	7.8	4.3	12.6	9.4	3.3
Green Ext Time (p_c), s	0.1	2.2	0.0	2.4	0.1	3.0	0.4	0.1

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	288	104	46	506	273	35	279	49	126	17	83
Future Volume (vph)	112	288	104	46	506	273	35	279	49	126	17	83
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.978			0.876	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2730	1731	1471	1509	1748	1500	1553	3137	0	1538	1383	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2730	1731	1471	1509	1748	1500	1553	3137	0	1538	1383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			286		16			97	
Link Speed (mph)		30			45			35			30	
Link Distance (ft)		720			275			1347			978	
Travel Time (s)		16.4			4.2			26.2			22.2	
Confl. Peds. (#/hr)									1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	4%	4%	7%	3%	2%	4%	7%	3%	5%	9%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	130	335	121	53	588	317	41	324	57	147	20	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	335	121	53	588	317	41	381	0	147	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												

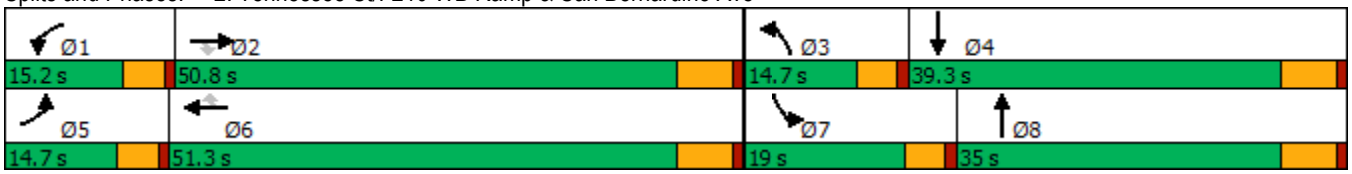


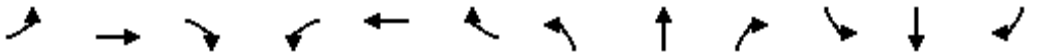
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	14.7	50.8	50.8	15.2	51.3	51.3	14.7	35.0		19.0	39.3	
Total Split (%)	12.3%	42.3%	42.3%	12.7%	42.8%	42.8%	12.3%	29.2%		15.8%	32.8%	
Maximum Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		1			0	
Act Effct Green (s)	10.2	43.3	43.3	10.4	39.8	39.8	10.2	18.4		13.4	28.5	
Actuated g/C Ratio	0.10	0.42	0.42	0.10	0.38	0.38	0.10	0.18		0.13	0.28	
v/c Ratio	0.49	0.46	0.18	0.35	0.88	0.42	0.27	0.67		0.74	0.26	
Control Delay	54.4	26.9	5.0	55.3	46.1	5.9	53.2	44.8		68.4	11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.4	26.9	5.0	55.3	46.1	5.9	53.2	44.8		68.4	11.6	
LOS	D	C	A	E	D	A	D	D		E	B	
Approach Delay		28.5			33.3			45.6			43.2	
Approach LOS		C			C			D			D	
90th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Ped		Max	Hold	
70th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	20.0		14.3	24.3	
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	10.0	44.3	44.3	10.0	44.3	44.3	10.0	17.8		14.3	22.1	
50th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Max	Gap		Max	Hold	
30th %ile Green (s)	10.0	37.5	37.5	10.0	37.5	37.5	0.0	15.5		14.1	34.3	
30th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Skip	Gap		Gap	Hold	
10th %ile Green (s)	10.0	42.3	42.3	0.0	27.6	27.6	0.0	11.7		10.1	26.5	
10th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	102	203	12	43	427	34	32	279		107	22	
Fuel Used(gal)	2	4	1	1	13	2	1	8		3	1	
CO Emissions (g/hr)	170	302	53	90	888	153	67	579		231	79	
NOx Emissions (g/hr)	33	59	10	18	173	30	13	113		45	15	
VOC Emissions (g/hr)	39	70	12	21	206	35	16	134		54	18	
Dilemma Vehicles (#)	0	0	0	0	21	0	0	12		0	0	
Queue Length 50th (ft)	44	166	0	35	354	13	27	127		99	11	
Queue Length 95th (ft)	80	275	34	79	#585	65	65	169		#207	52	
Internal Link Dist (ft)		640			195			1267			898	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	268	762	715	155	778	826	152	905		216	520	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.49	0.44	0.17	0.34	0.76	0.38	0.27	0.42		0.68	0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 103.6			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 35.5		Intersection LOS: D	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 120			
70th %ile Actuated Cycle: 111			
50th %ile Actuated Cycle: 107.8			
30th %ile Actuated Cycle: 98.5			
10th %ile Actuated Cycle: 80.8			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	288	104	46	506	273	35	279	49	126	17	83
Future Volume (veh/h)	112	288	104	46	506	273	35	279	49	126	17	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1500	1744	1744	1607	1758	1772	1647	1702	1758	1634	1674	1589
Adj Flow Rate, veh/h	130	335	121	53	588	317	41	324	57	147	20	97
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	4	4	7	3	2	4	7	3	5	9	15
Cap, veh/h	298	708	600	125	669	571	112	440	77	176	50	243
Arrive On Green	0.11	0.41	0.41	0.08	0.38	0.38	0.07	0.16	0.16	0.11	0.20	0.20
Sat Flow, veh/h	2772	1744	1478	1531	1758	1502	1569	2752	479	1556	249	1207
Grp Volume(v), veh/h	130	335	121	53	588	317	41	189	192	147	0	117
Grp Sat Flow(s),veh/h/ln	1386	1744	1478	1531	1758	1502	1569	1617	1614	1556	0	1456
Q Serve(g_s), s	3.9	12.6	4.7	2.9	27.9	14.8	2.2	9.9	10.2	8.3	0.0	6.2
Cycle Q Clear(g_c), s	3.9	12.6	4.7	2.9	27.9	14.8	2.2	9.9	10.2	8.3	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.83
Lane Grp Cap(c), veh/h	298	708	600	125	669	571	112	258	258	176	0	294
V/C Ratio(X)	0.44	0.47	0.20	0.42	0.88	0.55	0.37	0.73	0.75	0.83	0.00	0.40
Avail Cap(c_a), veh/h	310	873	740	180	890	760	175	524	523	249	0	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	19.5	17.2	39.1	25.8	21.8	39.6	35.8	35.8	38.8	0.0	31.0
Incr Delay (d2), s/veh	1.0	0.5	0.2	2.3	8.0	0.8	2.0	4.0	4.2	15.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.0	1.6	1.1	12.0	5.1	0.9	4.1	4.2	3.9	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	20.0	17.4	41.3	33.8	22.6	41.6	39.7	40.1	54.1	0.0	31.9
LnGrp LOS	D	C	B	D	C	C	D	D	D	D	A	C
Approach Vol, veh/h		586			958			422			264	
Approach Delay, s/veh		23.6			30.5			40.1			44.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	42.3	11.1	24.0	14.3	40.0	14.8	20.3
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 11	44.8	* 10	33.3	* 10	45.3	* 14	29.0
Max Q Clear Time (g_c+I1), s	4.9	14.6	4.2	8.2	5.9	29.9	10.3	12.2
Green Ext Time (p_c), s	0.0	2.6	0.0	0.7	0.1	4.2	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	7	356	16	3	164
Future Volume (vph)	27	7	356	16	3	164
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		100	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971		0.994			
Flt Protected	0.962				0.950	
Satd. Flow (prot)	1648	0	1754	0	1676	1765
Flt Permitted	0.962				0.950	
Satd. Flow (perm)	1648	0	1754	0	1676	1765
Link Speed (mph)	30		35			35
Link Distance (ft)	1715		1348			1347
Travel Time (s)	39.0		26.3			26.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	29	8	387	17	3	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	0	404	0	3	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

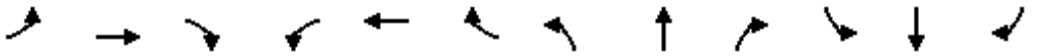
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	7	356	16	3	164
Future Vol, veh/h	27	7	356	16	3	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	8	387	17	3	178

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	580	396	0	0	404	0
Stage 1	396	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	477	653	-	-	1155	-
Stage 1	680	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	476	653	-	-	1155	-
Mov Cap-2 Maneuver	476	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	845	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	504	1155	-
HCM Lane V/C Ratio	-	-	0.073	0.003	-
HCM Control Delay (s)	-	-	12.7	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	179	125	177	393	102	161	233	114	58	116	17
Future Volume (vph)	37	179	125	177	393	102	161	233	114	58	116	17
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		1.00				0.99			
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1404	3353	1500	1538	1679	0	1553	1698	1471	1553	1698	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1404	3353	1475	1538	1679	0	1553	1698	1452	1553	1698	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		16				133			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1348	
Travel Time (s)		5.9			8.2			12.9			26.3	
Confl. Peds. (#/hr)			5			1			1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	15%	2%	2%	5%	3%	5%	4%	6%	4%	4%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	40	192	134	190	423	110	173	251	123	62	125	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	192	134	190	533	0	173	251	123	62	125	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

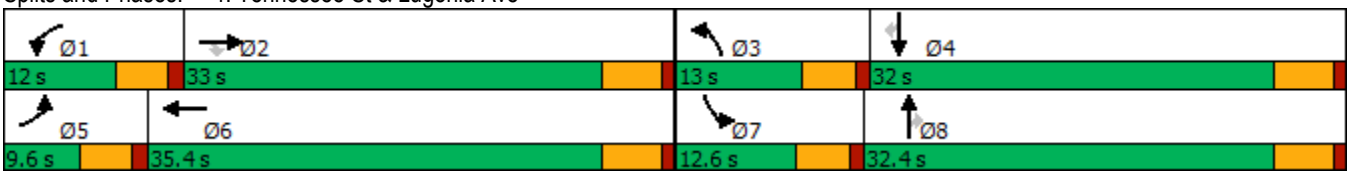


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.6	33.0	33.0	12.0	35.4		13.0	32.4	32.4	12.6	32.0	32.0
Total Split (%)	10.7%	36.7%	36.7%	13.3%	39.3%		14.4%	36.0%	36.0%	14.0%	35.6%	35.6%
Maximum Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.4	27.4	8.1	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		5	5		1			1	1		0	0
Act Effct Green (s)	5.7	19.2	19.2	8.4	27.8		9.6	18.8	18.8	7.8	14.6	14.6
Actuated g/C Ratio	0.08	0.28	0.28	0.12	0.40		0.14	0.27	0.27	0.11	0.21	0.21
v/c Ratio	0.34	0.21	0.26	1.02	0.77		0.80	0.54	0.25	0.35	0.35	0.04
Control Delay	47.4	20.4	5.9	112.6	30.9		65.8	29.7	5.7	41.2	28.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	20.4	5.9	112.6	30.9		65.8	29.7	5.7	41.2	28.1	0.2
LOS	D	C	A	F	C		E	C	A	D	C	A
Approach Delay		18.0			52.4			35.7			29.6	
Approach LOS		B			D			D			C	
90th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.0	27.0	8.1	26.6	26.6
90th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Ped	Ped	Max	Hold	Hold
70th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	19.6	19.6	8.1	19.2	19.2
70th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	16.7	16.7	8.1	16.3	16.3
50th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
30th %ile Green (s)	0.0	12.2	12.2	7.5	24.2		8.5	21.5	21.5	0.0	8.5	8.5
30th %ile Term Code	Skip	Hold	Hold	Max	Gap		Max	Hold	Hold	Skip	Gap	Gap
10th %ile Green (s)	0.0	6.3	6.3	7.5	18.3		8.9	8.4	8.4	0.0	0.0	0.0
10th %ile Term Code	Skip	Gap	Gap	Max	Hold		Hold	Gap	Gap	Skip	Skip	Skip
Stops (vph)	33	116	18	107	365		109	181	15	52	86	0
Fuel Used(gal)	1	3	1	6	8		5	5	1	1	2	0
CO Emissions (g/hr)	63	204	74	398	573		328	368	102	101	171	12
NOx Emissions (g/hr)	12	40	14	77	111		64	72	20	20	33	2
VOC Emissions (g/hr)	15	47	17	92	133		76	85	24	23	40	3
Dilemma Vehicles (#)	0	9	0	0	30		0	12	0	0	5	0
Queue Length 50th (ft)	20	33	0	~123	225		~94	116	0	29	53	0
Queue Length 95th (ft)	#66	67	40	#282	#481		#244	188	34	74	99	0
Internal Link Dist (ft)		269			341			583			1268	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	116	1523	743	187	836		217	755	719	204	744	731

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.13	0.18	1.02	0.64		0.80	0.33	0.17	0.30	0.17	0.02

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 68.7	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 38.1	Intersection LOS: D
Intersection Capacity Utilization 65.8%	ICU Level of Service C
Analysis Period (min) 15	
90th %ile Actuated Cycle: 89.6	
70th %ile Actuated Cycle: 82.2	
50th %ile Actuated Cycle: 79.3	
30th %ile Actuated Cycle: 55.7	
10th %ile Actuated Cycle: 36.7	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 4: Tennessee St & Lugonia Ave

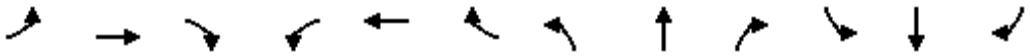


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	179	125	177	393	102	161	233	114	58	116	17
Future Volume (veh/h)	37	179	125	177	393	102	161	233	114	58	116	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1501	1772	1772	1634	1758	1730	1647	1716	1744	1647	1716	1772
Adj Flow Rate, veh/h	40	192	134	190	423	110	173	251	123	62	125	18
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	15	2	2	5	3	5	4	6	4	4	6	2
Cap, veh/h	59	957	425	202	502	131	209	347	298	86	212	185
Arrive On Green	0.04	0.28	0.28	0.13	0.37	0.37	0.13	0.20	0.20	0.05	0.12	0.12
Sat Flow, veh/h	1430	3367	1494	1556	1345	350	1569	1716	1476	1569	1716	1502
Grp Volume(v), veh/h	40	192	134	190	0	533	173	251	123	62	125	18
Grp Sat Flow(s),veh/h/ln	1430	1683	1494	1556	0	1694	1569	1716	1476	1569	1716	1502
Q Serve(g_s), s	1.6	2.5	4.1	7.0	0.0	16.6	6.2	7.9	4.2	2.2	4.0	0.6
Cycle Q Clear(g_c), s	1.6	2.5	4.1	7.0	0.0	16.6	6.2	7.9	4.2	2.2	4.0	0.6
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	957	425	202	0	632	209	347	298	86	212	185
V/C Ratio(X)	0.68	0.20	0.32	0.94	0.00	0.84	0.83	0.72	0.41	0.72	0.59	0.10
Avail Cap(c_a), veh/h	126	1632	724	202	0	892	231	814	700	220	802	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	15.7	16.2	24.9	0.0	16.5	24.4	21.5	20.0	26.9	23.9	22.5
Incr Delay (d2), s/veh	13.1	0.1	0.4	46.5	0.0	5.2	19.8	2.9	0.9	11.0	2.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	1.3	5.0	0.0	6.3	3.3	3.1	1.4	1.0	1.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	15.8	16.7	71.4	0.0	21.8	44.2	24.4	21.0	37.9	26.6	22.7
LnGrp LOS	D	B	B	E	A	C	D	C	C	D	C	C
Approach Vol, veh/h		366			723			547			205	
Approach Delay, s/veh		18.8			34.8			29.9			29.6	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	21.4	12.2	12.1	6.9	26.6	7.7	16.7
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.5	28.0	8.5	27.0	5.1	30.4	8.1	27.4
Max Q Clear Time (g_c+I1), s	9.0	6.1	8.2	6.0	3.6	18.6	4.2	9.9
Green Ext Time (p_c), s	0.0	1.5	0.0	0.6	0.0	2.7	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	217	5	167	209	445	0	0	332	157
Future Volume (vph)	0	0	0	217	5	167	209	445	0	0	332	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.936						0.941	
Flt Protected					0.973		0.950					
Satd. Flow (prot)	0	0	0	0	3050	0	1568	3196	0	0	3089	0
Flt Permitted					0.973		0.950					
Satd. Flow (perm)	0	0	0	0	3050	0	1568	3196	0	0	3089	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					172						167	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1108			612			817	
Travel Time (s)		19.4			25.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	13%	2%	3%	7%	2%	2%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	224	5	172	215	459	0	0	342	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	401	0	215	459	0	0	563	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (ft)				20	100		20	100			100	
Trailing Detector (ft)				0	0		0	0			0	
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4								
Detector Phase				4	4		1	6			2	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				27.0	27.0		31.0	63.0			32.0	
Total Split (%)				30.0%	30.0%		34.4%	70.0%			35.6%	
Maximum Green (s)				21.5	21.5		26.0	57.5			26.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								2				
Act Effct Green (s)					12.6		17.6	66.4			43.8	
Actuated g/C Ratio					0.14		0.20	0.74			0.49	
v/c Ratio					0.70		0.70	0.19			0.35	
Control Delay					27.0		36.4	7.5			12.1	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					27.0		36.4	7.5			12.1	
LOS					C		D	A			B	
Approach Delay					27.0			16.7			12.1	
Approach LOS					C			B			B	
90th %ile Green (s)				18.2	18.2		24.2	60.8			31.6	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				14.5	14.5		20.4	64.5			39.1	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				12.4	12.4		17.6	66.6			44.0	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				10.4	10.4		14.8	68.6			48.8	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				7.5	7.5		10.8	71.5			55.7	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					207		193	251			216	
Fuel Used(gal)					7		4	5			8	
CO Emissions (g/hr)					464		274	317			563	
NOx Emissions (g/hr)					90		53	62			110	
VOC Emissions (g/hr)					108		64	73			130	
Dilemma Vehicles (#)					0		0	29			27	
Queue Length 50th (ft)					64		117	90			66	
Queue Length 95th (ft)					105		188	110			136	
Internal Link Dist (ft)		775			1028			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					859		452	2358			1590	

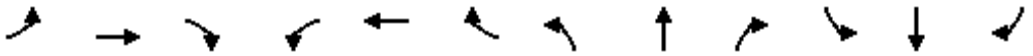
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.47		0.48	0.19			0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 46.5 (52%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 17.7		Intersection LOS: B	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Tennessee St & I-10 WB Ramps

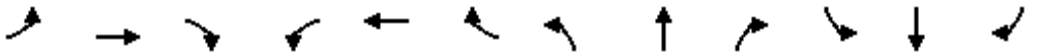




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	217	5	167	209	445	0	0	332	157
Future Volume (veh/h)	0	0	0	217	5	167	209	445	0	0	332	157
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1772	1617	1772	1660	1702	0	0	1758	1716
Adj Flow Rate, veh/h				224	5	172	215	459	0	0	342	221
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Percent Heavy Veh, %				2	13	2	3	7	0	0	3	6
Cap, veh/h				274	7	238	246	2264	0	0	960	608
Arrive On Green				0.18	0.18	0.18	0.31	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1540	39	1338	1581	3318	0	0	2049	1243
Grp Volume(v), veh/h				224	0	177	215	459	0	0	290	273
Grp Sat Flow(s),veh/h/ln				1540	0	1377	1581	1617	0	0	1670	1534
Q Serve(g_s), s				12.6	0.0	10.9	11.6	0.0	0.0	0.0	9.7	9.9
Cycle Q Clear(g_c), s				12.6	0.0	10.9	11.6	0.0	0.0	0.0	9.7	9.9
Prop In Lane				1.00		0.97	1.00		0.00	0.00		0.81
Lane Grp Cap(c), veh/h				274	0	244	246	2264	0	0	817	751
V/C Ratio(X)				0.82	0.00	0.72	0.88	0.20	0.00	0.00	0.36	0.36
Avail Cap(c_a), veh/h				368	0	329	457	2264	0	0	817	751
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.6	0.0	34.9	30.2	0.0	0.0	0.0	14.2	14.3
Incr Delay (d2), s/veh				10.2	0.0	5.1	8.8	0.2	0.0	0.0	1.2	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.4	0.0	3.9	4.2	0.1	0.0	0.0	3.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.8	0.0	40.0	39.0	0.2	0.0	0.0	15.4	15.6
LnGrp LOS				D	A	D	D	A	A	A	B	B
Approach Vol, veh/h					401			674			563	
Approach Delay, s/veh					43.3			12.6			15.5	
Approach LOS					D			B			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.0	49.5		21.5		68.5						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	26.0	26.5		21.5		57.5						
Max Q Clear Time (g_c+I1), s	13.6	11.9		14.6		2.0						
Green Ext Time (p_c), s	0.5	3.0		1.4		3.3						

Intersection Summary		
HCM 6th Ctrl Delay		21.1
HCM 6th LOS		C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	144	321	0	0	0	0	510	112	124	425	0
Future Volume (vph)	144	144	321	0	0	0	0	510	112	124	425	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.921						0.973				
Flt Protected		0.988								0.950		
Satd. Flow (prot)	0	2980	0	0	0	0	0	3169	0	1553	3353	0
Flt Permitted		0.988								0.950		
Satd. Flow (perm)	0	2980	0	0	0	0	0	3169	0	1553	3353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		316						33				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	7%	3%	2%	2%	2%	2%	5%	5%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	147	147	328	0	0	0	0	520	114	127	434	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	622	0	0	0	0	0	634	0	127	434	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	31.0	31.0						39.0		20.0	59.0	
Total Split (%)	34.4%	34.4%						43.3%		22.2%	65.6%	
Maximum Green (s)	25.5	25.5						33.5		15.0	53.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								3				
Act Effct Green (s)		16.7						44.7		12.6	62.3	
Actuated g/C Ratio		0.19						0.50		0.14	0.69	
v/c Ratio		0.77						0.40		0.59	0.19	
Control Delay		22.8						16.3		41.9	2.7	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		22.8						16.3		41.9	2.7	
LOS		C						B		D	A	
Approach Delay		22.8						16.3			11.6	
Approach LOS		C						B			B	
90th %ile Green (s)	24.5	24.5						31.9		17.6	54.5	
90th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
70th %ile Green (s)	20.0	20.0						39.4		14.6	59.0	
70th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
50th %ile Green (s)	16.5	16.5						44.9		12.6	62.5	
50th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
30th %ile Green (s)	13.7	13.7						49.8		10.5	65.3	
30th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
10th %ile Green (s)	8.9	8.9						57.6		7.5	70.1	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		283						372		110	109	
Fuel Used(gal)		10						7		2	3	
CO Emissions (g/hr)		711						523		170	205	
NOx Emissions (g/hr)		138						102		33	40	
VOC Emissions (g/hr)		165						121		39	47	
Dilemma Vehicles (#)		0						35		0	8	
Queue Length 50th (ft)		86						106		64	12	
Queue Length 95th (ft)		132						196		93	16	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1070						1602		267	2320	

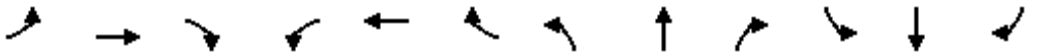
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.58						0.40		0.48	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77.6 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 17.1		Intersection LOS: B	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Tennessee St & I-10 EB Ramps

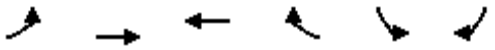




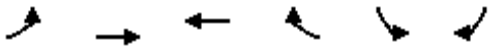
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	144	321	0	0	0	0	510	112	124	425	0
Future Volume (veh/h)	144	144	321	0	0	0	0	510	112	124	425	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1730	1702	1758				0	1730	1730	1647	1772	0
Adj Flow Rate, veh/h	147	147	328				0	520	114	127	434	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	7	3				0	5	5	4	2	0
Cap, veh/h	213	213	370				0	1249	273	157	2090	0
Arrive On Green	0.26	0.26	0.26				0.00	0.47	0.47	0.03	0.20	0.00
Sat Flow, veh/h	830	830	1442				0	2769	585	1569	3455	0
Grp Volume(v), veh/h	294	0	328				0	318	316	127	434	0
Grp Sat Flow(s),veh/h/ln	1660	0	1442				0	1643	1624	1569	1683	0
Q Serve(g_s), s	14.4	0.0	19.7				0.0	11.5	11.6	7.2	9.6	0.0
Cycle Q Clear(g_c), s	14.4	0.0	19.7				0.0	11.5	11.6	7.2	9.6	0.0
Prop In Lane	0.50		1.00				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	426	0	370				0	765	756	157	2090	0
V/C Ratio(X)	0.69	0.00	0.89				0.00	0.42	0.42	0.81	0.21	0.00
Avail Cap(c_a), veh/h	470	0	409				0	765	756	261	2090	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	30.2	0.0	32.2				0.0	15.9	16.0	42.7	17.4	0.0
Incr Delay (d2), s/veh	3.8	0.0	19.0				0.0	1.7	1.7	9.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	8.6				0.0	4.4	4.4	3.3	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	51.1				0.0	17.6	17.7	51.7	17.6	0.0
LnGrp LOS	C	A	D				A	B	B	D	B	A
Approach Vol, veh/h		622						634			561	
Approach Delay, s/veh		43.0						17.6			25.3	
Approach LOS		D						B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		61.4			14.0	47.4		28.6				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		53.5			15.0	33.5		25.5				
Max Q Clear Time (g_c+I1), s		11.6			9.2	13.6		21.7				
Green Ext Time (p_c), s		3.1			0.1	3.7		1.4				

Intersection Summary			
HCM 6th Ctrl Delay		28.7	
HCM 6th LOS		C	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	195	474	97	146	64
Future Volume (vph)	14	195	474	97	146	64
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.975			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3320	3217	0	2891	1485
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3320	3217	0	2891	1485
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			59			67
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	15	205	499	102	154	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	205	601	0	154	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



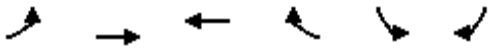
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	46.0	37.0		14.0	14.0
Total Split (%)	15.0%	76.7%	61.7%		23.3%	23.3%
Maximum Green (s)	4.2	39.7	30.7		9.2	9.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)			7.0			
Flash Dont Walk (s)			19.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)	4.3	19.3	18.0		7.3	7.3
Actuated g/C Ratio	0.13	0.57	0.53		0.21	0.21
v/c Ratio	0.07	0.11	0.35		0.25	0.18
Control Delay	17.1	5.4	7.4		13.6	6.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	17.1	5.4	7.4		13.6	6.3
LOS	B	A	A		B	A
Approach Delay		6.2	7.4		11.3	
Approach LOS		A	A		B	
90th %ile Green (s)	4.2	27.0	18.0		9.2	9.2
90th %ile Term Code	Max	Hold	Gap		Max	Max
70th %ile Green (s)	0.0	12.3	12.3		7.6	7.6
70th %ile Term Code	Skip	Hold	Gap		Gap	Gap
50th %ile Green (s)	0.0	11.6	11.6		7.0	7.0
50th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
30th %ile Green (s)	0.0	16.7	16.7		6.6	6.6
30th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
10th %ile Green (s)	0.0	21.5	21.5		0.0	0.0
10th %ile Term Code	Skip	Dwell	Dwell		Skip	Skip
Stops (vph)	16	90	302		108	20
Fuel Used(gal)	0	4	7		4	1
CO Emissions (g/hr)	31	313	500		279	101
NOx Emissions (g/hr)	6	61	97		54	20
VOC Emissions (g/hr)	7	73	116		65	24
Dilemma Vehicles (#)	0	23	63		0	0
Queue Length 50th (ft)	2	9	28		9	0
Queue Length 95th (ft)	17	21	91		38	24
Internal Link Dist (ft)		2474	430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	202	3213	2921		809	463

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.07	0.06	0.21		0.19	0.14

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 34			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 31.3%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 47.3			
70th %ile Actuated Cycle: 31			
50th %ile Actuated Cycle: 29.7			
30th %ile Actuated Cycle: 34.4			
10th %ile Actuated Cycle: 27.8			

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr





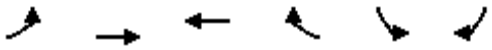
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	195	474	97	146	64
Future Volume (veh/h)	14	195	474	97	146	64
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1758	1744	1772	1575	1758
Adj Flow Rate, veh/h	15	205	499	102	154	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	3	4	2	2	3
Cap, veh/h	19	1667	906	184	403	206
Arrive On Green	0.01	0.50	0.33	0.33	0.14	0.14
Sat Flow, veh/h	1594	3428	2830	558	2910	1490
Grp Volume(v), veh/h	15	205	300	301	154	67
Grp Sat Flow(s),veh/h/ln	1594	1670	1657	1643	1455	1490
Q Serve(g_s), s	0.3	1.0	4.5	4.6	1.5	1.2
Cycle Q Clear(g_c), s	0.3	1.0	4.5	4.6	1.5	1.2
Prop In Lane	1.00			0.34	1.00	1.00
Lane Grp Cap(c), veh/h	19	1667	547	543	403	206
V/C Ratio(X)	0.80	0.12	0.55	0.55	0.38	0.32
Avail Cap(c_a), veh/h	219	4332	1661	1648	875	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.1	4.1	8.4	8.4	12.0	11.9
Incr Delay (d2), s/veh	52.9	0.0	0.9	0.9	0.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	1.0	1.0	0.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	67.9	4.1	9.2	9.3	12.6	12.8
LnGrp LOS	E	A	A	A	B	B
Approach Vol, veh/h		220	601		221	
Approach Delay, s/veh		8.5	9.3		12.7	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.6		9.0	5.2	16.4
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 40		* 9.2	* 4.2	* 31
Max Q Clear Time (g_c+I1), s		3.0		3.5	2.3	6.6
Green Ext Time (p_c), s		1.3		0.3	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	408	664	0	7	52
Future Volume (vph)	0	408	664	0	7	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			100	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.882	
Flt Protected					0.994	
Satd. Flow (prot)	0	4818	3353	0	1547	0
Flt Permitted					0.994	
Satd. Flow (perm)	0	4818	3353	0	1547	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		230	480		362	
Travel Time (s)		4.5	9.4		8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	443	722	0	8	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	443	722	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes				
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

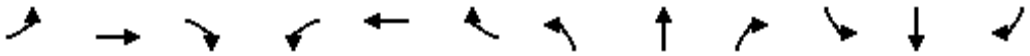
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↾	
Traffic Vol, veh/h	0	408	664	0	7	52
Future Vol, veh/h	0	408	664	0	7	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	443	722	0	8	57

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	899	361
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	-	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	0	-	-	0	311	636
Stage 1	0	-	-	0	430	-
Stage 2	0	-	-	0	797	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	311	636
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	797	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	586
HCM Lane V/C Ratio	-	-	0.109
HCM Control Delay (s)	-	-	11.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	298	84	40	524	6	88	2	26	13	7	52
Future Volume (vph)	33	298	84	40	524	6	88	2	26	13	7	52
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98									
Frt			0.850		0.998			0.969			0.903	
Flt Protected	0.950			0.950				0.964			0.991	
Satd. Flow (prot)	1676	3257	1515	1583	3346	0	0	1608	0	0	1579	0
Flt Permitted	0.424			0.950				0.727			0.934	
Satd. Flow (perm)	748	3257	1481	1583	3346	0	0	1213	0	0	1488	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		3			18			57	
Link Speed (mph)		35			35			40			30	
Link Distance (ft)		480			320			976			370	
Travel Time (s)		9.4			6.2			16.6			8.4	
Confl. Peds. (#/hr)			1									
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	5%	1%	2%	2%	2%	3%	2%	10%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	339	95	45	595	7	100	2	30	14	8	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	339	95	45	602	0	0	132	0	0	79	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												

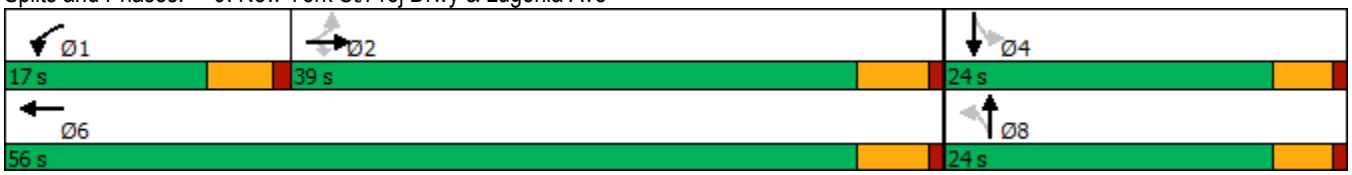


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	15.0	10.0	15.0		5.0	5.0		15.0	15.0	
Minimum Split (s)	23.3	23.3	23.3	15.0	23.3		22.5	22.5		23.0	23.0	
Total Split (s)	39.0	39.0	39.0	17.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	48.8%	48.8%	48.8%	21.3%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	33.7	33.7	33.7	12.0	50.7		19.5	19.5		19.5	19.5	
Yellow Time (s)	4.3	4.3	4.3	4.0	4.3		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.0	5.3			4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0				11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1	1				0	0		0	0	
Act Effct Green (s)	24.1	24.1	24.1	11.4	28.6			11.8			17.1	
Actuated g/C Ratio	0.59	0.59	0.59	0.28	0.70			0.29			0.42	
v/c Ratio	0.08	0.18	0.10	0.10	0.26			0.37			0.12	
Control Delay	14.6	11.6	4.8	17.9	6.0			15.7			7.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	14.6	11.6	4.8	17.9	6.0			15.7			7.6	
LOS	B	B	A	B	A			B			A	
Approach Delay		10.5			6.8			15.7			7.6	
Approach LOS		B			A			B			A	
90th %ile Green (s)	15.7	15.7	15.7	10.0	30.7		15.0	15.0		15.0	15.0	
90th %ile Term Code	Gap	Gap	Gap	Min	Hold		Hold	Hold		Min	Min	
70th %ile Green (s)	15.0	15.0	15.0	10.0	30.0		15.0	15.0		15.0	15.0	
70th %ile Term Code	Min	Min	Min	Min	Hold		Hold	Hold		Min	Min	
50th %ile Green (s)	15.0	15.0	15.0	0.0	15.0		15.0	15.0		15.0	15.0	
50th %ile Term Code	Min	Min	Min	Skip	Min		Hold	Hold		Min	Min	
30th %ile Green (s)	15.0	15.0	15.0	0.0	15.0		0.0	0.0		0.0	0.0	
30th %ile Term Code	Min	Min	Min	Skip	Min		Skip	Skip		Skip	Skip	
10th %ile Green (s)	30.0	30.0	30.0	0.0	30.0		0.0	0.0		0.0	0.0	
10th %ile Term Code	Dwell	Dwell	Dwell	Skip	Dwell		Skip	Skip		Skip	Skip	
Stops (vph)	26	167	19	34	212			74			25	
Fuel Used(gal)	0	3	1	0	3			2			0	
CO Emissions (g/hr)	29	209	36	34	242			130			32	
NOx Emissions (g/hr)	6	41	7	7	47			25			6	
VOC Emissions (g/hr)	7	49	8	8	56			30			7	
Dilemma Vehicles (#)	0	17	0	0	28			10			0	
Queue Length 50th (ft)	5	25	0	8	50			16			3	
Queue Length 95th (ft)	28	75	26	35	73			71			31	
Internal Link Dist (ft)		400			240			896			290	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	602	2620	1210	528	3238			665			832	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.06	0.13	0.08	0.09	0.19			0.20			0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 41.1			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 55.5			
70th %ile Actuated Cycle: 54.8			
50th %ile Actuated Cycle: 39.8			
30th %ile Actuated Cycle: 20.3			
10th %ile Actuated Cycle: 35.3			

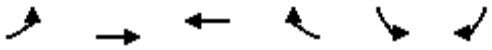
Splits and Phases: 9: New York St/Proj Drwy & Lugonia Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	298	84	40	524	6	88	2	26	13	7	52
Future Volume (veh/h)	33	298	84	40	524	6	88	2	26	13	7	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1730	1786	1673	1772	1772	1758	1772	1660	1772	1772	1772
Adj Flow Rate, veh/h	36	339	95	45	595	7	100	2	30	14	8	57
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	1	2	2	2	3	2	10	2	2	2
Cap, veh/h	401	1017	468	149	1726	20	427	23	94	127	85	323
Arrive On Green	0.31	0.31	0.31	0.09	0.51	0.51	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	817	3287	1511	1594	3408	40	1016	80	322	135	292	1107
Grp Volume(v), veh/h	36	339	95	45	294	308	132	0	0	79	0	0
Grp Sat Flow(s),veh/h/ln	817	1643	1511	1594	1683	1765	1419	0	0	1534	0	0
Q Serve(g_s), s	1.5	3.8	2.2	1.3	5.1	5.1	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.5	3.8	2.2	1.3	5.1	5.1	3.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.76		0.23	0.18		0.72
Lane Grp Cap(c), veh/h	401	1017	468	149	852	894	544	0	0	534	0	0
V/C Ratio(X)	0.09	0.33	0.20	0.30	0.34	0.34	0.24	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	717	2285	1051	395	1761	1846	697	0	0	701	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.1	12.9	12.3	20.5	7.2	7.2	13.2	0.0	0.0	12.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.2	1.1	0.2	0.2	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.2	0.7	0.5	1.3	1.4	0.9	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	13.1	12.5	21.6	7.4	7.4	13.5	0.0	0.0	12.9	0.0	0.0
LnGrp LOS	B	B	B	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		470			647			132			79	
Approach Delay, s/veh		12.9			8.4			13.5			12.9	
Approach LOS		B			A			B			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.5	20.3		18.6		29.8		18.6				
Change Period (Y+Rc), s	5.0	5.3		4.5		5.3		4.5				
Max Green Setting (Gmax), s	12.0	33.7		19.5		50.7		19.5				
Max Q Clear Time (g_c+I1), s	3.3	5.8		3.8		7.1		5.2				
Green Ext Time (p_c), s	0.0	2.8		0.3		3.9		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			10.8									
HCM 6th LOS			B									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	318	540	3	6	30
Future Volume (vph)	19	318	540	3	6	30
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.888	
Flt Protected	0.950				0.992	
Satd. Flow (prot)	1568	3226	1763	0	1555	0
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	1568	3226	1763	0	1555	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	6%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	22	361	614	3	7	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	361	617	0	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	318	540	3	6	30
Future Vol, veh/h	19	318	540	3	6	30
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	6	2	2	2	2
Mvmt Flow	22	361	614	3	7	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	618	0	-	0	842	617
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	225	-
Critical Hdwy	4.145	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.2285	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	954	-	-	-	318	489
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	953	-	-	-	310	489
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	953	-	-	-	446
HCM Lane V/C Ratio	0.023	-	-	-	0.092
HCM Control Delay (s)	8.9	-	-	-	13.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	12	1	13	11	3	3	6	15	0	4	2
Future Volume (vph)	0	12	1	13	11	3	3	6	15	0	4	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991			0.984			0.916			0.961	
Flt Protected					0.976			0.993				
Satd. Flow (prot)	0	1749	0	0	1705	0	0	1599	0	0	1708	0
Flt Permitted					0.976			0.993				
Satd. Flow (perm)	0	1749	0	0	1705	0	0	1599	0	0	1708	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1715			965			1320			301	
Travel Time (s)		39.0			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	3%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	14	1	16	13	4	4	7	18	0	5	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	33	0	0	29	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	12	1	13	11	3	3	6	15	0	4	2
Future Vol, veh/h	0	12	1	13	11	3	3	6	15	0	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	1	2	1	2	1	3	1	1	2
Mvmt Flow	0	14	1	16	13	4	4	7	18	0	5	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	15	0	0	66	64	15	74	62	15
Stage 1	-	-	-	-	-	-	15	15	-	47	47	-
Stage 2	-	-	-	-	-	-	51	49	-	27	15	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.12	6.51	6.23	7.11	6.51	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.518	4.009	3.327	3.509	4.009	3.318
Pot Cap-1 Maneuver	1600	-	-	1609	-	-	927	829	1062	919	831	1065
Stage 1	-	-	-	-	-	-	1005	885	-	969	858	-
Stage 2	-	-	-	-	-	-	962	856	-	993	885	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1600	-	-	1609	-	-	914	821	1062	891	823	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	914	821	-	891	823	-
Stage 1	-	-	-	-	-	-	1005	885	-	969	849	-
Stage 2	-	-	-	-	-	-	945	847	-	968	885	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.5	8.8	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	971	1600	-	-	1609	-	-	890
HCM Lane V/C Ratio	0.03	-	-	-	0.01	-	-	0.008
HCM Control Delay (s)	8.8	0	-	-	7.3	0	-	9.1
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	10	17	131	25	49	6	189	44	42	254	7
Future Volume (vph)	27	10	17	131	25	49	6	189	44	42	254	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.957			0.967			0.975			0.997	
Flt Protected		0.976			0.969			0.999			0.993	
Satd. Flow (prot)	0	1611	0	0	1662	0	0	1726	0	0	1762	0
Flt Permitted		0.976			0.969			0.999			0.993	
Satd. Flow (perm)	0	1611	0	0	1662	0	0	1726	0	0	1762	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	7%	8%	1%	1%	3%	1%	1%	4%	1%	1%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	11	18	138	26	52	6	199	46	44	267	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	216	0	0	251	0	0	318	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

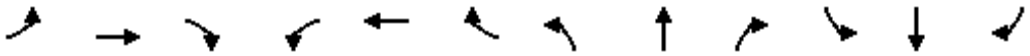
Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	10	17	131	25	49	6	189	44	42	254	7
Future Vol, veh/h	27	10	17	131	25	49	6	189	44	42	254	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	7	8	1	1	3	1	1	4	1	1	7
Mvmt Flow	28	11	18	138	26	52	6	199	46	44	267	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	11.1	10.8	12.2
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	50%	64%	14%
Vol Thru, %	79%	19%	12%	84%
Vol Right, %	18%	31%	24%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	239	54	205	303
LT Vol	6	27	131	42
Through Vol	189	10	25	254
RT Vol	44	17	49	7
Lane Flow Rate	252	57	216	319
Geometry Grp	1	1	1	1
Degree of Util (X)	0.353	0.09	0.327	0.451
Departure Headway (Hd)	5.045	5.683	5.45	5.096
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	712	629	658	711
Service Time	3.078	3.73	3.488	3.096
HCM Lane V/C Ratio	0.354	0.091	0.328	0.449
HCM Control Delay	10.8	9.3	11.1	12.2
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.6	0.3	1.4	2.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	237	45	191	426	26	45	174	94	25	295	74
Future Volume (vph)	42	237	45	191	426	26	45	174	94	25	295	74
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.991				0.850			0.850
Flt Protected	0.950			0.950				0.990			0.996	
Satd. Flow (prot)	1599	3214	0	1599	3312	0	0	1764	1443	0	1772	1500
Flt Permitted	0.950			0.950				0.796			0.962	
Satd. Flow (perm)	1599	3214	0	1599	3312	0	0	1419	1443	0	1712	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			9				135			135
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		425			524			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	4%	3%	1%	2%	8%	1%	1%	6%	3%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	46	258	49	208	463	28	49	189	102	27	321	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	307	0	208	491	0	0	238	102	0	348	80
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												



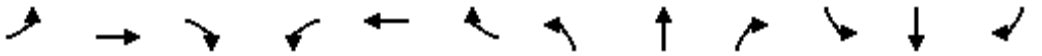
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	11.1	32.0		24.0	44.9		34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	12.3%	35.6%		26.7%	49.9%		37.8%	37.8%	37.8%	37.8%	37.8%	37.8%
Maximum Green (s)	6.4	27.3		19.3	40.2		29.3	29.3	29.3	29.3	29.3	29.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.7	4.7		4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	6.4	11.0		13.0	23.1			17.3	17.3		17.3	17.3
Actuated g/C Ratio	0.11	0.20		0.23	0.41			0.31	0.31		0.31	0.31
v/c Ratio	0.25	0.47		0.56	0.36			0.54	0.19		0.66	0.14
Control Delay	32.0	23.0		27.5	14.6			22.5	2.9		24.6	1.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	32.0	23.0		27.5	14.6			22.5	2.9		24.6	1.5
LOS	C	C		C	B			C	A		C	A
Approach Delay		24.1			18.4			16.6			20.3	
Approach LOS		C			B			B			C	
90th %ile Green (s)	6.4	15.4		19.3	28.3		27.5	27.5	27.5	27.5	27.5	27.5
90th %ile Term Code	Max	Gap		Max	Hold		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	6.4	12.8		16.0	22.4		20.9	20.9	20.9	20.9	20.9	20.9
70th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
50th %ile Green (s)	6.4	10.7		12.9	17.2		16.9	16.9	16.9	16.9	16.9	16.9
50th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
30th %ile Green (s)	0.0	9.1		10.5	24.3		13.6	13.6	13.6	13.6	13.6	13.6
30th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
10th %ile Green (s)	0.0	7.3		7.8	19.8		10.0	10.0	10.0	10.0	10.0	10.0
10th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
Stops (vph)	39	209		153	286			163	7		251	3
Fuel Used(gal)	1	5		3	5			4	1		7	1
CO Emissions (g/hr)	60	341		206	364			252	39		487	50
NOx Emissions (g/hr)	12	66		40	71			49	7		95	10
VOC Emissions (g/hr)	14	79		48	84			58	9		113	12
Dilemma Vehicles (#)	0	17		0	28			14	0		21	0
Queue Length 50th (ft)	14	42		59	64			63	0		96	0
Queue Length 95th (ft)	53	100		150	126			149	18		212	9
Internal Link Dist (ft)		345			444			591			1254	
Turn Bay Length (ft)	105			100					50			50
Base Capacity (vph)	192	1657		578	2481			779	853		940	884

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.24	0.19		0.36	0.20			0.31	0.12		0.37	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 56.2			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 19.6		Intersection LOS: B	
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 76.3			
70th %ile Actuated Cycle: 63.8			
50th %ile Actuated Cycle: 54.6			
30th %ile Actuated Cycle: 47.3			
10th %ile Actuated Cycle: 39.2			

Splits and Phases: 13: Texas St & Lugonia Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	237	45	191	426	26	45	174	94	25	295	74
Future Volume (veh/h)	42	237	45	191	426	26	45	174	94	25	295	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1744	1758	1687	1772	1688	1786	1786	1716	1758	1786	1772
Adj Flow Rate, veh/h	46	258	49	208	463	28	49	189	102	27	321	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	4	3	1	2	8	1	1	6	3	1	2
Cap, veh/h	71	407	76	255	841	51	70	214	682	62	446	705
Arrive On Green	0.04	0.15	0.15	0.16	0.26	0.26	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1606	2786	521	1606	3226	195	0	456	1454	0	950	1502
Grp Volume(v), veh/h	46	152	155	208	241	250	238	0	102	348	0	80
Grp Sat Flow(s),veh/h/ln	1606	1657	1650	1606	1683	1737	456	0	1454	951	0	1502
Q Serve(g_s), s	1.8	5.4	5.5	7.8	7.7	7.8	0.0	0.0	2.5	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.8	5.4	5.5	7.8	7.7	7.8	29.3	0.0	2.5	29.3	0.0	1.9
Prop In Lane	1.00		0.32	1.00		0.11	0.21		1.00	0.08		1.00
Lane Grp Cap(c), veh/h	71	242	241	255	439	453	284	0	682	508	0	705
V/C Ratio(X)	0.65	0.63	0.64	0.82	0.55	0.55	0.84	0.00	0.15	0.68	0.00	0.11
Avail Cap(c_a), veh/h	165	725	722	497	1084	1119	284	0	683	508	0	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	25.0	25.1	25.4	19.9	19.9	16.0	0.0	9.5	14.0	0.0	9.3
Incr Delay (d2), s/veh	9.7	2.7	2.9	6.3	1.1	1.1	19.5	0.0	0.1	3.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	2.2	3.2	2.9	3.0	3.4	0.0	0.7	3.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	27.7	28.0	31.7	21.0	21.0	35.6	0.0	9.6	17.8	0.0	9.4
LnGrp LOS	D	C	C	C	C	C	D	A	A	B	A	A
Approach Vol, veh/h		353			699			340			428	
Approach Delay, s/veh		29.3			24.2			27.8			16.2	
Approach LOS		C			C			C			B	

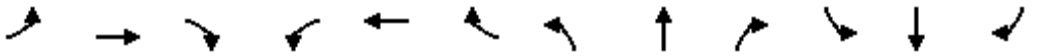
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.6	13.8		34.0	7.4	21.0		34.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 19	* 27		* 29	* 6.4	* 40		* 29				
Max Q Clear Time (g_c+I1), s	9.8	7.5		31.3	3.8	9.8		31.3				
Green Ext Time (p_c), s	0.4	1.6		0.0	0.0	3.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		24.0	
HCM 6th LOS		C	

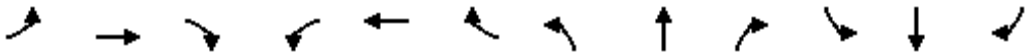
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix H:
Existing Year With Project (Scenario B) PM Peak Hour Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	584	84	125	233	129	48	61	269	161	256	125
Future Volume (vph)	102	584	84	125	233	129	48	61	269	161	256	125
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											1.00	
Frt			0.850			0.850			0.850		0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			155			113		75	
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		1161			720			1341			1495	
Travel Time (s)		26.4			16.4			26.1			34.0	
Confl. Peds. (#/hr)												2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	6%	4%	2%	2%	2%	3%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	105	602	87	129	240	133	49	63	277	166	264	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	602	87	129	240	133	49	63	277	166	393	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

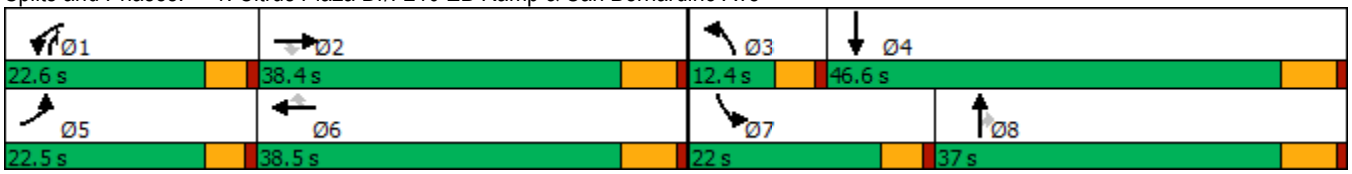


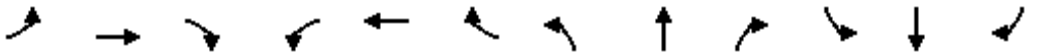
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.4	38.4	22.6	38.5	38.5	12.4	37.0	22.6	22.0	46.6	
Total Split (%)	18.8%	32.0%	32.0%	18.8%	32.1%	32.1%	10.3%	30.8%	18.8%	18.3%	38.8%	
Maximum Green (s)	17.8	32.4	32.4	17.9	32.5	32.5	7.7	31.0	17.9	17.3	40.6	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			2	
Act Effct Green (s)	11.4	21.3	21.3	12.4	26.2	26.2	7.5	10.1	25.0	15.2	20.0	
Actuated g/C Ratio	0.15	0.27	0.27	0.16	0.33	0.33	0.10	0.13	0.32	0.19	0.26	
v/c Ratio	0.46	0.66	0.17	0.52	0.42	0.22	0.33	0.28	0.50	0.55	0.46	
Control Delay	43.0	30.8	0.7	43.6	28.3	4.3	47.4	38.7	16.0	42.3	23.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.0	30.8	0.7	43.6	28.3	4.3	47.4	38.7	16.0	42.3	23.8	
LOS	D	C	A	D	C	A	D	D	B	D	C	
Approach Delay		29.1			25.9			23.6			29.3	
Approach LOS		C			C			C			C	
90th %ile Green (s)	17.4	32.4	32.4	17.9	32.9	32.9	7.7	21.4	17.9	17.3	31.0	
90th %ile Term Code	Gap	Max	Max	Max	Hold	Hold	Max	Hold	Max	Max	Ped	
70th %ile Green (s)	13.3	25.7	25.7	14.8	27.2	27.2	7.7	10.0	14.8	17.3	19.6	
70th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Max	Hold	
50th %ile Green (s)	11.1	21.6	21.6	12.3	22.8	22.8	7.7	8.5	12.3	14.9	15.7	
50th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Gap	Hold	
30th %ile Green (s)	9.1	17.6	17.6	10.0	18.5	18.5	0.0	7.2	10.0	12.1	24.0	
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Skip	Gap	Gap	Gap	Hold	
10th %ile Green (s)	0.0	11.1	11.1	7.1	22.9	22.9	0.0	0.0	7.1	11.3	10.0	
10th %ile Term Code	Skip	Gap	Gap	Gap	Hold	Hold	Skip	Skip	Gap	Hold	Min	
Stops (vph)	85	476	0	106	173	11	44	51	113	132	237	
Fuel Used(gal)	2	12	1	2	4	1	2	2	7	4	8	
CO Emissions (g/hr)	160	810	54	168	252	63	119	142	479	279	531	
NOx Emissions (g/hr)	31	157	11	33	49	12	23	28	93	54	103	
VOC Emissions (g/hr)	37	188	13	39	58	15	28	33	111	65	123	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	3	0	0	0	
Queue Length 50th (ft)	48	136	0	59	97	0	23	29	59	75	73	
Queue Length 95th (ft)	124	253	2	147	217	32	75	77	147	#200	141	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	393	1518	764	396	772	753	170	764	683	379	1827	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.27	0.40	0.11	0.33	0.31	0.18	0.29	0.08	0.41	0.44	0.22	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 78.3			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 27.5		Intersection LOS: C	
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 110.4			
70th %ile Actuated Cycle: 89.2			
50th %ile Actuated Cycle: 78.7			
30th %ile Actuated Cycle: 68.3			
10th %ile Actuated Cycle: 44.9			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	584	84	125	233	129	48	61	269	161	256	125
Future Volume (veh/h)	102	584	84	125	233	129	48	61	269	161	256	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1716	1744	1673	1772	1772	1660	1772	1758
Adj Flow Rate, veh/h	105	602	87	129	240	133	49	63	277	166	264	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	6	4	2	2	2	3	2	3
Cap, veh/h	150	844	377	174	456	393	69	362	471	214	655	311
Arrive On Green	0.09	0.25	0.25	0.11	0.27	0.27	0.04	0.20	0.20	0.14	0.30	0.30
Sat Flow, veh/h	1594	3367	1502	1594	1716	1478	1594	1772	1502	1581	2214	1050
Grp Volume(v), veh/h	105	602	87	129	240	133	49	63	277	166	199	194
Grp Sat Flow(s),veh/h/ln	1594	1683	1502	1594	1716	1478	1594	1772	1502	1581	1683	1580
Q Serve(g_s), s	4.6	11.6	3.3	5.6	8.5	5.2	2.2	2.1	11.1	7.2	6.7	7.0
Cycle Q Clear(g_c), s	4.6	11.6	3.3	5.6	8.5	5.2	2.2	2.1	11.1	7.2	6.7	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	150	844	377	174	456	393	69	362	471	214	498	468
V/C Ratio(X)	0.70	0.71	0.23	0.74	0.53	0.34	0.71	0.17	0.59	0.78	0.40	0.42
Avail Cap(c_a), veh/h	398	1530	683	400	782	674	172	771	817	384	959	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	24.4	21.2	30.8	22.3	21.1	33.6	23.4	20.6	29.8	20.0	20.1
Incr Delay (d2), s/veh	5.8	1.1	0.3	6.0	0.9	0.5	12.3	0.2	1.2	6.0	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.5	1.1	2.4	3.4	1.7	1.0	0.8	3.7	3.0	2.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	25.5	21.5	36.8	23.3	21.6	45.9	23.6	21.7	35.8	20.6	20.7
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		794			502			389			559	
Approach Delay, s/veh		26.6			26.3			25.1			25.1	
Approach LOS		C			C			C			C	

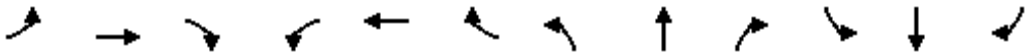
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	23.9	7.8	27.1	11.4	25.0	14.3	20.6
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 18	32.4	* 7.7	40.6	* 18	32.5	* 17	31.0
Max Q Clear Time (g_c+I1), s	7.6	13.6	4.2	9.0	6.6	10.5	9.2	13.1
Green Ext Time (p_c), s	0.2	4.3	0.0	2.6	0.2	1.8	0.3	1.2

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	481	140	23	320	159	57	384	37	184	12	110
Future Volume (vph)	393	481	140	23	320	159	57	384	37	184	12	110
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.987			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			198		8			113	
Link Speed (mph)		30			40			35			30	
Link Distance (ft)		720			275			1347			996	
Travel Time (s)		16.4			4.7			26.2			22.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	3%	2%	2%	3%	4%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	405	496	144	24	330	164	59	396	38	190	12	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	405	496	144	24	330	164	59	434	0	190	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												



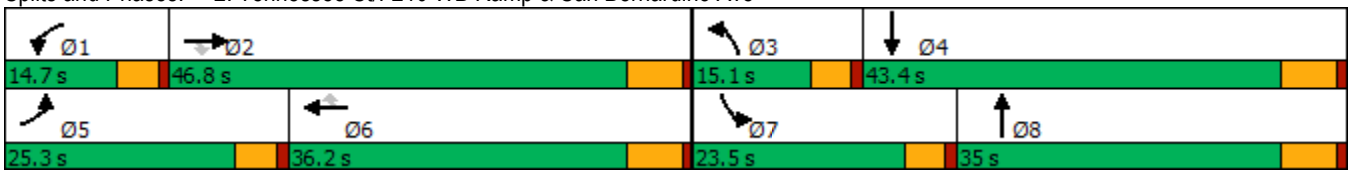
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	25.3	46.8	46.8	14.7	36.2	36.2	15.1	35.0		23.5	43.4	
Total Split (%)	21.1%	39.0%	39.0%	12.3%	30.2%	30.2%	12.6%	29.2%		19.6%	36.2%	
Maximum Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	29.0		18.8	37.4	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	18.4	41.9	41.9	10.3	23.8	23.8	10.5	18.7		16.4	28.8	
Actuated g/C Ratio	0.19	0.42	0.42	0.10	0.24	0.24	0.11	0.19		0.16	0.29	
v/c Ratio	0.76	0.67	0.20	0.15	0.79	0.32	0.36	0.69		0.73	0.25	
Control Delay	50.5	31.6	4.3	49.6	51.4	4.3	53.9	44.4		59.9	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.5	31.6	4.3	49.6	51.4	4.3	53.9	44.4		59.9	8.9	
LOS	D	C	A	D	D	A	D	D		E	A	
Approach Delay		35.2			36.4			45.6			39.7	
Approach LOS		D			D			D			D	
90th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	26.0		18.8	34.4	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
70th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	21.6		18.8	30.0	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	20.6	50.4	50.4	0.0	25.1	25.1	10.0	19.3		18.8	28.1	
50th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Min	Gap		Max	Hold	
30th %ile Green (s)	17.2	42.5	42.5	0.0	20.6	20.6	10.0	16.0		15.2	21.2	
30th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Min	Gap		Gap	Hold	
10th %ile Green (s)	12.9	32.2	32.2	0.0	14.6	14.6	0.0	12.0		10.9	27.6	
10th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	347	368	13	22	284	10	52	366		159	22	
Fuel Used(gal)	8	8	1	1	8	1	2	11		5	1	
CO Emissions (g/hr)	571	547	68	40	552	77	110	745		318	89	
NOx Emissions (g/hr)	111	106	13	8	107	15	21	145		62	17	
VOC Emissions (g/hr)	132	127	16	9	128	18	25	173		74	21	
Dilemma Vehicles (#)	0	0	0	0	14	0	0	15		0	0	
Queue Length 50th (ft)	132	234	0	15	209	0	38	143		121	6	
Queue Length 95th (ft)	#223	#504	37	45	336	32	88	207		#248	52	
Internal Link Dist (ft)		640			195			1267			916	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	618	786	747	164	548	601	169	1002		306	639	

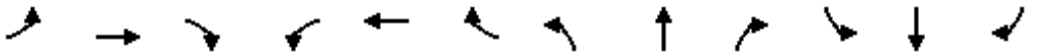
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.66	0.63	0.19	0.15	0.60	0.27	0.35	0.43		0.62	0.20	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 99.4	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 38.2	Intersection LOS: D
Intersection Capacity Utilization 76.7%	ICU Level of Service D
Analysis Period (min) 15	
90th %ile Actuated Cycle: 117	
70th %ile Actuated Cycle: 112.6	
50th %ile Actuated Cycle: 105.2	
30th %ile Actuated Cycle: 90.4	
10th %ile Actuated Cycle: 71.8	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	481	140	23	320	159	57	384	37	184	12	110
Future Volume (veh/h)	393	481	140	23	320	159	57	384	37	184	12	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1758	1673	1758	1758	1660	1772	1772	1660	1744	1716
Adj Flow Rate, veh/h	405	496	144	24	330	164	59	396	38	190	12	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	3	2	3	3	3	2	2	3	4	6
Cap, veh/h	501	621	522	83	405	343	147	548	52	228	33	309
Arrive On Green	0.17	0.35	0.35	0.05	0.23	0.23	0.09	0.18	0.18	0.14	0.23	0.23
Sat Flow, veh/h	2910	1772	1490	1594	1758	1490	1581	3105	296	1581	144	1356
Grp Volume(v), veh/h	405	496	144	24	330	164	59	214	220	190	0	125
Grp Sat Flow(s),veh/h/ln	1455	1772	1490	1594	1758	1490	1581	1683	1719	1581	0	1500
Q Serve(g_s), s	10.3	19.5	5.4	1.1	13.7	7.4	2.7	9.3	9.4	9.0	0.0	5.4
Cycle Q Clear(g_c), s	10.3	19.5	5.4	1.1	13.7	7.4	2.7	9.3	9.4	9.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.90
Lane Grp Cap(c), veh/h	501	621	522	83	405	343	147	297	303	228	0	341
V/C Ratio(X)	0.81	0.80	0.28	0.29	0.82	0.48	0.40	0.72	0.73	0.83	0.00	0.37
Avail Cap(c_a), veh/h	776	935	786	206	687	582	213	632	645	385	0	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	22.6	18.0	35.3	28.2	25.7	33.0	30.0	30.1	32.2	0.0	25.1
Incr Delay (d2), s/veh	3.6	2.9	0.3	1.9	4.0	1.0	1.8	3.3	3.3	7.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.1	1.8	0.5	5.8	2.6	1.1	3.8	4.0	3.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	25.6	18.3	37.1	32.2	26.8	34.8	33.3	33.4	39.9	0.0	25.8
LnGrp LOS	C	C	B	D	C	C	C	C	C	D	A	C
Approach Vol, veh/h		1045			518			493			315	
Approach Delay, s/veh		28.0			30.7			33.5			34.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	33.1	11.9	23.6	18.0	23.8	15.8	19.6
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0
Max Green Setting (Gmax), s	* 10	40.8	* 10	37.4	* 21	30.2	* 19	29.0
Max Q Clear Time (g_c+I1), s	3.1	21.5	4.7	7.4	12.3	15.7	11.0	11.4
Green Ext Time (p_c), s	0.0	3.6	0.0	0.8	1.0	2.1	0.3	2.3

Intersection Summary	
HCM 6th Ctrl Delay	30.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	5	473	37	7	168
Future Volume (vph)	22	5	473	37	7	168
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		100	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.977		0.990			
Flt Protected	0.960				0.950	
Satd. Flow (prot)	1655	0	1747	0	1676	1765
Flt Permitted	0.960				0.950	
Satd. Flow (perm)	1655	0	1747	0	1676	1765
Link Speed (mph)	30		35			35
Link Distance (ft)	1715		1348			1347
Travel Time (s)	39.0		26.3			26.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	24	5	514	40	8	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	554	0	8	183
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

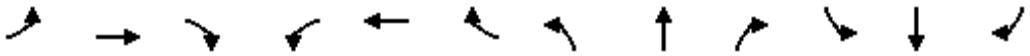
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	5	473	37	7	168
Future Vol, veh/h	22	5	473	37	7	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	5	514	40	8	183

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	733	534	0	0	554	0
Stage 1	534	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	388	546	-	-	1016	-
Stage 1	588	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	385	546	-	-	1016	-
Mov Cap-2 Maneuver	385	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	407	1016	-
HCM Lane V/C Ratio	-	-	0.072	0.007	-
HCM Control Delay (s)	-	-	14.5	8.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	765	404	149	442	115	301	314	261	87	85	18
Future Volume (vph)	81	765	404	149	442	115	301	314	261	87	85	18
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		0.99				0.99			0.98
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1701	0	1583	1765	1471	1583	1748	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1470	1583	1701	0	1583	1765	1449	1583	1748	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			309		15				244			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1348	
Travel Time (s)		5.9			8.2			12.9			26.3	
Confl. Peds. (#/hr)			8			3			3			3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	84	789	416	154	456	119	310	324	269	90	88	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	789	416	154	575	0	310	324	269	90	88	19
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

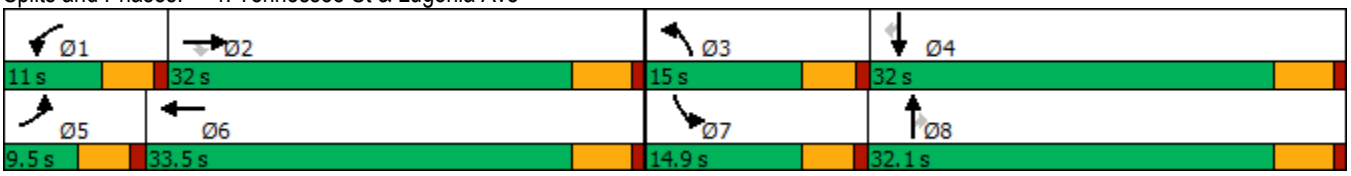


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.5	32.0	32.0	11.0	33.5		15.0	32.1	32.1	14.9	32.0	32.0
Total Split (%)	10.6%	35.6%	35.6%	12.2%	37.2%		16.7%	35.7%	35.7%	16.6%	35.6%	35.6%
Maximum Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		8	8		3			3	3		3	3
Act Effct Green (s)	5.1	27.6	27.6	6.7	29.2		11.0	19.9	19.9	8.9	17.8	17.8
Actuated g/C Ratio	0.06	0.35	0.35	0.08	0.37		0.14	0.25	0.25	0.11	0.22	0.22
v/c Ratio	0.83	0.68	0.59	1.17	0.91		1.42	0.74	0.49	0.51	0.23	0.04
Control Delay	97.0	28.2	10.9	169.7	47.9		243.8	38.7	8.2	47.0	26.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.0	28.2	10.9	169.7	47.9		243.8	38.7	8.2	47.0	26.0	0.2
LOS	F	C	B	F	D		F	D	A	D	C	A
Approach Delay		27.1			73.7			100.0			33.1	
Approach LOS		C			E			F			C	
90th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
90th %ile Term Code	Max	Max	Max	Max	Max		Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	25.6	25.6	10.4	25.5	25.5
70th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	21.2	21.2	10.0	20.7	20.7
50th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
30th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	16.6	16.6	8.2	14.3	14.3
30th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
10th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		11.6	11.1	11.1	0.0	0.0	0.0
10th %ile Term Code	Max	Hold	Hold	Max	Max		Hold	Gap	Gap	Skip	Skip	Skip
Stops (vph)	59	630	108	103	422		204	270	42	78	61	0
Fuel Used(gal)	3	15	4	7	11		20	8	4	2	2	0
CO Emissions (g/hr)	185	1051	301	463	786		1376	550	247	158	121	12
NOx Emissions (g/hr)	36	205	59	90	153		268	107	48	31	24	2
VOC Emissions (g/hr)	43	244	70	107	182		319	127	57	37	28	3
Dilemma Vehicles (#)	0	43	0	0	31		0	15	0	0	4	0
Queue Length 50th (ft)	45	191	41	~102	288		~233	156	10	45	37	0
Queue Length 95th (ft)	#140	285	144	#236	#558		#420	246	69	97	73	0
Internal Link Dist (ft)		269			341			583			1268	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	101	1162	711	132	632		219	614	663	211	606	594

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.68	0.59	1.17	0.91		1.42	0.53	0.41	0.43	0.15	0.03

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 79.7			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.42			
Intersection Signal Delay: 59.5		Intersection LOS: E	
Intersection Capacity Utilization 77.9%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 88.5			
50th %ile Actuated Cycle: 83.7			
30th %ile Actuated Cycle: 77.3			
10th %ile Actuated Cycle: 59.1			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: Tennessee St & Lugonia Ave

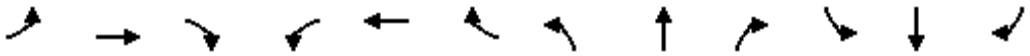


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	765	404	149	442	115	301	314	261	87	85	18
Future Volume (veh/h)	81	765	404	149	442	115	301	314	261	87	85	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1744	1673	1758	1772
Adj Flow Rate, veh/h	84	789	416	154	456	119	310	324	269	90	88	19
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	4	2	3	2
Cap, veh/h	104	1148	509	142	495	129	230	422	351	112	289	245
Arrive On Green	0.06	0.34	0.34	0.09	0.37	0.37	0.14	0.24	0.24	0.07	0.16	0.16
Sat Flow, veh/h	1594	3367	1491	1594	1353	353	1594	1772	1472	1594	1758	1488
Grp Volume(v), veh/h	84	789	416	154	0	575	310	324	269	90	88	19
Grp Sat Flow(s),veh/h/ln	1594	1683	1491	1594	0	1707	1594	1772	1472	1594	1758	1488
Q Serve(g_s), s	3.8	14.7	18.6	6.5	0.0	23.5	10.5	12.4	12.4	4.1	3.2	0.8
Cycle Q Clear(g_c), s	3.8	14.7	18.6	6.5	0.0	23.5	10.5	12.4	12.4	4.1	3.2	0.8
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	1148	509	142	0	624	230	422	351	112	289	245
V/C Ratio(X)	0.81	0.69	0.82	1.08	0.00	0.92	1.35	0.77	0.77	0.80	0.30	0.08
Avail Cap(c_a), veh/h	109	1248	553	142	0	668	230	659	548	228	652	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	20.6	21.9	33.2	0.0	22.1	31.2	25.8	25.8	33.4	26.8	25.7
Incr Delay (d2), s/veh	34.0	1.4	8.8	99.3	0.0	17.7	183.1	2.9	3.5	12.4	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.4	7.1	6.3	0.0	11.5	15.5	5.2	4.4	1.9	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	22.1	30.7	132.4	0.0	39.9	214.2	28.8	29.4	45.7	27.3	25.9
LnGrp LOS	E	C	C	F	A	D	F	C	C	D	C	C
Approach Vol, veh/h		1289			729			903			197	
Approach Delay, s/veh		27.8			59.4			92.6			35.6	
Approach LOS		C			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	29.8	15.0	17.0	9.2	31.6	9.6	22.4
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	6.5	27.0	10.5	27.0	5.0	28.5	10.4	27.1
Max Q Clear Time (g_c+I1), s	8.5	20.6	12.5	5.2	5.8	25.5	6.1	14.4
Green Ext Time (p_c), s	0.0	3.4	0.0	0.4	0.0	1.1	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	54.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	119	3	232	223	732	0	0	530	136
Future Volume (vph)	0	0	0	119	3	232	223	732	0	0	530	136
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.902						0.969	
Flt Protected					0.983		0.950					
Satd. Flow (prot)	0	0	0	0	2953	0	1568	3353	0	0	3249	0
Flt Permitted					0.983		0.950					
Satd. Flow (perm)	0	0	0	0	2953	0	1568	3353	0	0	3249	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					244						38	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1063			612			817	
Travel Time (s)		19.4			24.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	125	3	244	235	771	0	0	558	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	372	0	235	771	0	0	701	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2			2	
Detector Template				Left	Thru		Left	Thru			Thru	
Leading Detector (ft)				20	100		20	100			100	
Trailing Detector (ft)				0	0		0	0			0	
Turn Type				Perm	NA		Prot	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4								
Detector Phase				4	4		1	6			2	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				24.0	24.0		30.0	66.0			36.0	
Total Split (%)				26.7%	26.7%		33.3%	73.3%			40.0%	
Maximum Green (s)				18.5	18.5		25.0	60.5			30.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								1				
Act Effct Green (s)					10.0		18.6	69.0			45.4	
Actuated g/C Ratio					0.11		0.21	0.77			0.50	
v/c Ratio					0.69		0.73	0.30			0.42	
Control Delay					19.8		43.0	1.1			15.9	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					19.8		43.0	1.1			15.9	
LOS					B		D	A			B	
Approach Delay					19.8			10.9			15.9	
Approach LOS					B			B			B	
90th %ile Green (s)				15.5	15.5		25.3	63.5			33.2	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				11.7	11.7		21.5	67.3			40.8	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				9.6	9.6		18.7	69.4			45.7	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				7.5	7.5		15.8	71.5			50.7	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				5.5	5.5		11.7	73.5			56.8	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					120		183	72			396	
Fuel Used(gal)					5		4	4			12	
CO Emissions (g/hr)					350		302	275			857	
NOx Emissions (g/hr)					68		59	54			167	
VOC Emissions (g/hr)					81		70	64			199	
Dilemma Vehicles (#)					0		0	22			37	
Queue Length 50th (ft)					36		112	13			117	
Queue Length 95th (ft)					75		m105	m18			212	
Internal Link Dist (ft)		775			983			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					800		436	2572			1659	

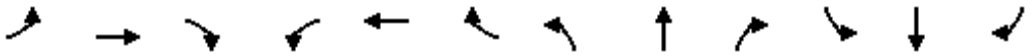
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.47		0.54	0.30			0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 49 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 83.7%		ICU Level of Service E	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 5: Tennessee St & I-10 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	119	3	232	223	732	0	0	530	136
Future Volume (veh/h)	0	0	0	119	3	232	223	732	0	0	530	136
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1744	1772	1772	1660	1772	0	0	1772	1772
Adj Flow Rate, veh/h				125	3	244	235	771	0	0	558	143
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				4	2	2	3	2	0	0	2	2
Cap, veh/h				307	7	279	265	2329	0	0	1244	318
Arrive On Green				0.19	0.19	0.19	0.34	1.00	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1650	40	1502	1581	3455	0	0	2744	678
Grp Volume(v), veh/h				128	0	244	235	771	0	0	353	348
Grp Sat Flow(s),veh/h/ln				1689	0	1502	1581	1683	0	0	1683	1650
Q Serve(g_s), s				6.0	0.0	14.2	12.7	0.0	0.0	0.0	12.7	12.8
Cycle Q Clear(g_c), s				6.0	0.0	14.2	12.7	0.0	0.0	0.0	12.7	12.8
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.41
Lane Grp Cap(c), veh/h				314	0	279	265	2329	0	0	789	773
V/C Ratio(X)				0.41	0.00	0.87	0.89	0.33	0.00	0.00	0.45	0.45
Avail Cap(c_a), veh/h				347	0	309	439	2329	0	0	789	773
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.48	0.48	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.3	0.0	35.6	29.1	0.0	0.0	0.0	16.1	16.1
Incr Delay (d2), s/veh				0.8	0.0	21.7	6.2	0.2	0.0	0.0	1.8	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	6.8	4.2	0.1	0.0	0.0	5.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.1	0.0	57.3	35.3	0.2	0.0	0.0	17.9	18.0
LnGrp LOS				C	A	E	D	A	A	A	B	B
Approach Vol, veh/h					372			1006			701	
Approach Delay, s/veh					49.0			8.4			17.9	
Approach LOS					D			A			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.1	47.7		22.2		67.8						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	25.0	30.5		18.5		60.5						
Max Q Clear Time (g_c+I1), s	14.7	14.8		16.2		2.0						
Green Ext Time (p_c), s	0.5	3.8		0.5		6.2						

Intersection Summary		
HCM 6th Ctrl Delay		18.9
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	348	354	0	0	0	0	621	149	239	410	0
Future Volume (vph)	334	348	354	0	0	0	0	621	149	239	410	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.949						0.971				
Flt Protected		0.984								0.950		
Satd. Flow (prot)	0	3121	0	0	0	0	0	3256	0	1583	3320	0
Flt Permitted		0.984								0.950		
Satd. Flow (perm)	0	3121	0	0	0	0	0	3256	0	1583	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110						34				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	352	366	373	0	0	0	0	654	157	252	432	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1091	0	0	0	0	0	811	0	252	432	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

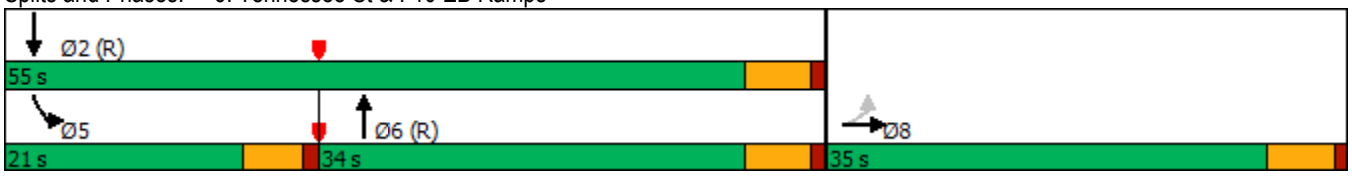
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	35.0	35.0						34.0		21.0	55.0	
Total Split (%)	38.9%	38.9%						37.8%		23.3%	61.1%	
Maximum Green (s)	29.5	29.5						28.5		16.0	49.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		31.3						26.9		15.8	47.7	
Actuated g/C Ratio		0.35						0.30		0.18	0.53	
v/c Ratio		0.94						0.81		0.91	0.25	
Control Delay		43.3						35.2		63.6	15.1	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		43.3						35.2		63.6	15.1	
LOS		D						D		E	B	
Approach Delay		43.3						35.2			33.0	
Approach LOS		D						D			C	
90th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
90th %ile Term Code	Max	Max						Coord		Max	Coord	
70th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
70th %ile Term Code	Max	Max						Coord		Max	Coord	
50th %ile Green (s)	30.0	30.0						28.0		16.0	49.0	
50th %ile Term Code	Max	Max						Coord		Max	Coord	
30th %ile Green (s)	32.3	32.3						25.7		16.0	46.7	
30th %ile Term Code	Max	Max						Coord		Max	Coord	
10th %ile Green (s)	35.2	35.2						23.9		14.9	43.8	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		809						666		208	284	
Fuel Used(gal)		23						14		6	5	
CO Emissions (g/hr)		1636						964		400	364	
NOx Emissions (g/hr)		318						188		78	71	
VOC Emissions (g/hr)		379						223		93	84	
Dilemma Vehicles (#)		0						43		0	19	
Queue Length 50th (ft)		293						211		146	108	
Queue Length 95th (ft)		#446						280		#280	48	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1156						1054		281	1826	

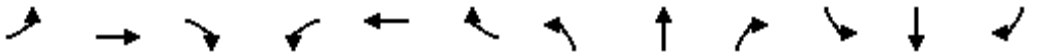
Synchro 11 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.94						0.77		0.90	0.24	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 87.5 (97%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 38.0		Intersection LOS: D	
Intersection Capacity Utilization 83.7%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Tennessee St & I-10 EB Ramps

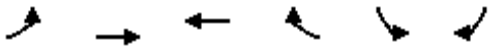




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	348	354	0	0	0	0	621	149	239	410	0
Future Volume (veh/h)	334	348	354	0	0	0	0	621	149	239	410	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1772	1772				0	1772	1772	1673	1758	0
Adj Flow Rate, veh/h	352	366	373				0	654	157	252	432	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2				0	2	2	2	3	0
Cap, veh/h	332	357	386				0	853	205	283	1837	0
Arrive On Green	0.33	0.33	0.33				0.00	0.32	0.32	0.06	0.18	0.00
Sat Flow, veh/h	1014	1088	1179				0	2782	646	1594	3428	0
Grp Volume(v), veh/h	598	0	493				0	408	403	252	432	0
Grp Sat Flow(s),veh/h/ln	1721	0	1560				0	1683	1656	1594	1670	0
Q Serve(g_s), s	29.5	0.0	28.0				0.0	19.7	19.8	14.1	10.0	0.0
Cycle Q Clear(g_c), s	29.5	0.0	28.0				0.0	19.7	19.8	14.1	10.0	0.0
Prop In Lane	0.59		0.76				0.00		0.39	1.00		0.00
Lane Grp Cap(c), veh/h	564	0	511				0	533	524	283	1837	0
V/C Ratio(X)	1.06	0.00	0.97				0.00	0.77	0.77	0.89	0.24	0.00
Avail Cap(c_a), veh/h	564	0	511				0	533	524	283	1837	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	30.3	0.0	29.7				0.0	27.7	27.8	41.5	20.6	0.0
Incr Delay (d2), s/veh	54.5	0.0	31.0				0.0	10.1	10.3	25.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.2	0.0	14.4				0.0	9.0	8.9	8.0	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.8	0.0	60.7				0.0	37.8	38.1	66.9	20.9	0.0
LnGrp LOS	F	A	E				A	D	D	E	C	A
Approach Vol, veh/h		1091						811			684	
Approach Delay, s/veh		73.9						38.0			37.9	
Approach LOS		E						D			D	

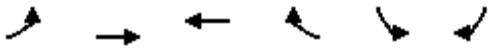
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		55.0			21.0	34.0		35.0				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		49.5			16.0	28.5		29.5				
Max Q Clear Time (g_c+I1), s		12.0			16.1	21.8		31.5				
Green Ext Time (p_c), s		3.0			0.0	2.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		53.1	
HCM 6th LOS		D	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	62	747	464	297	503	129
Future Volume (vph)	62	747	464	297	503	129
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.941			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3353	3155	0	2891	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3353	3155	0	2891	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			309			134
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	65	778	483	309	524	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	778	792	0	524	134
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						

Synchro 11 Report



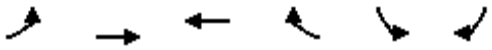
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	42.0	33.0		18.0	18.0
Total Split (%)	15.0%	70.0%	55.0%		30.0%	30.0%
Maximum Green (s)	4.2	35.7	26.7		13.2	13.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)			7.0			
Flash Dont Walk (s)			19.0			
Pedestrian Calls (#/hr)			6			
Act Effct Green (s)	4.5	20.7	16.1		12.2	12.2
Actuated g/C Ratio	0.10	0.46	0.36		0.27	0.27
v/c Ratio	0.41	0.50	0.59		0.67	0.26
Control Delay	34.9	9.0	9.3		22.7	6.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	34.9	9.0	9.3		22.7	6.0
LOS	C	A	A		C	A
Approach Delay		11.0	9.3		19.3	
Approach LOS		B	A		B	
90th %ile Green (s)	4.2	35.0	26.0		13.2	13.2
90th %ile Term Code	Max	Hold	Ped		Max	Max
70th %ile Green (s)	4.2	27.0	18.0		13.2	13.2
70th %ile Term Code	Max	Hold	Gap		Max	Max
50th %ile Green (s)	4.2	23.8	14.8		13.2	13.2
50th %ile Term Code	Max	Hold	Gap		Max	Max
30th %ile Green (s)	0.0	13.1	13.1		10.9	10.9
30th %ile Term Code	Skip	Gap	Hold		Gap	Gap
10th %ile Green (s)	0.0	9.9	9.9		8.9	8.9
10th %ile Term Code	Skip	Gap	Hold		Gap	Gap
Stops (vph)	53	431	336		391	25
Fuel Used(gal)	2	19	9		15	3
CO Emissions (g/hr)	142	1296	641		1038	196
NOx Emissions (g/hr)	28	252	125		202	38
VOC Emissions (g/hr)	33	300	149		241	45
Dilemma Vehicles (#)	0	63	68		0	0
Queue Length 50th (ft)	18	67	56		66	0
Queue Length 95th (ft)	#73	98	98		#163	36
Internal Link Dist (ft)		2474	430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	158	2709	2118		908	563

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.29	0.37		0.58	0.24

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 59.3			
70th %ile Actuated Cycle: 51.3			
50th %ile Actuated Cycle: 48.1			
30th %ile Actuated Cycle: 35.1			
10th %ile Actuated Cycle: 29.9			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr





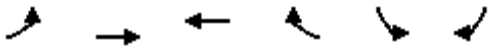
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	747	464	297	503	129
Future Volume (veh/h)	62	747	464	297	503	129
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1575	1772
Adj Flow Rate, veh/h	65	778	483	309	524	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	75	1721	699	446	686	354
Arrive On Green	0.05	0.51	0.35	0.35	0.24	0.24
Sat Flow, veh/h	1594	3455	2061	1257	2910	1502
Grp Volume(v), veh/h	65	778	412	380	524	134
Grp Sat Flow(s),veh/h/ln	1594	1683	1683	1546	1455	1502
Q Serve(g_s), s	1.8	6.4	9.2	9.2	7.4	3.3
Cycle Q Clear(g_c), s	1.8	6.4	9.2	9.2	7.4	3.3
Prop In Lane	1.00			0.81	1.00	1.00
Lane Grp Cap(c), veh/h	75	1721	597	548	686	354
V/C Ratio(X)	0.86	0.45	0.69	0.69	0.76	0.38
Avail Cap(c_a), veh/h	153	2738	1024	940	875	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	6.8	12.1	12.1	15.6	14.1
Incr Delay (d2), s/veh	23.8	0.2	1.4	1.6	3.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	2.7	2.5	2.3	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	7.0	13.5	13.7	18.7	14.7
LnGrp LOS	D	A	B	B	B	B
Approach Vol, veh/h		843	792		658	
Approach Delay, s/veh		9.9	13.6		17.9	
Approach LOS		A	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.7		15.2	6.9	21.9
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 36		* 13	* 4.2	* 27
Max Q Clear Time (g_c+I1), s		8.4		9.4	3.8	11.2
Green Ext Time (p_c), s		5.5		1.0	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1208	697	0	4	32
Future Volume (vph)	0	1208	697	0	4	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			100	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.879	
Flt Protected					0.995	
Satd. Flow (prot)	0	4818	3353	0	1543	0
Flt Permitted					0.995	
Satd. Flow (perm)	0	4818	3353	0	1543	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		230	480		362	
Travel Time (s)		4.5	9.4		8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1313	758	0	4	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1313	758	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes				
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

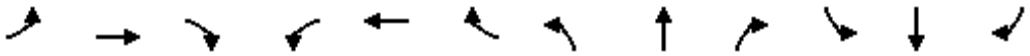
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↱	
Traffic Vol, veh/h	0	1208	697	0	4	32
Future Vol, veh/h	0	1208	697	0	4	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1313	758	0	4	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	1283	379
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	-	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	0	-	-	0	187	619
Stage 1	0	-	-	0	412	-
Stage 2	0	-	-	0	525	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	187	619
Mov Cap-2 Maneuver	-	-	-	-	294	-
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	525	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	551
HCM Lane V/C Ratio	-	-	0.071
HCM Control Delay (s)	-	-	12
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	940	162	40	496	21	169	7	58	8	5	32
Future Volume (vph)	110	940	162	40	496	21	169	7	58	8	5	32
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97									
Frt			0.850		0.994			0.967			0.904	
Flt Protected	0.950			0.950				0.965			0.991	
Satd. Flow (prot)	1676	3353	1485	1568	3333	0	0	1647	0	0	1581	0
Flt Permitted	0.439			0.950				0.755			0.938	
Satd. Flow (perm)	775	3353	1448	1568	3333	0	0	1288	0	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178		10			20			35	
Link Speed (mph)		35			35			40			30	
Link Distance (ft)		480			320			976			370	
Travel Time (s)		9.4			6.2			16.6			8.4	
Confl. Peds. (#/hr)			2									
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	120	1033	178	44	545	23	186	8	64	9	5	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1033	178	44	568	0	0	258	0	0	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	15.0	10.0	15.0		5.0	5.0		15.0	15.0	
Minimum Split (s)	23.3	23.3	23.3	15.0	23.3		22.5	22.5		22.5	22.5	
Total Split (s)	41.0	41.0	41.0	15.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	51.3%	51.3%	51.3%	18.8%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
Yellow Time (s)	4.3	4.3	4.3	4.0	4.3		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.0	5.3			4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0				11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	2	2	2				0	0		0	0	
Act Effct Green (s)	28.4	28.4	28.4	10.9	35.8			18.5			18.5	
Actuated g/C Ratio	0.44	0.44	0.44	0.17	0.55			0.28			0.28	
v/c Ratio	0.36	0.71	0.24	0.17	0.31			0.68			0.11	
Control Delay	17.8	18.9	3.4	32.4	7.4			34.7			12.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	17.8	18.9	3.4	32.4	7.4			34.7			12.6	
LOS	B	B	A	C	A			C			B	
Approach Delay		16.7			9.2			34.7			12.6	
Approach LOS		B			A			C			B	
90th %ile Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
90th %ile Term Code	Max	Max	Max	Max	Hold		Max	Max		Hold	Hold	
70th %ile Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
70th %ile Term Code	Max	Max	Max	Max	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	33.3	33.3	33.3	10.0	48.3		19.5	19.5		19.5	19.5	
50th %ile Term Code	Gap	Gap	Gap	Max	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	21.6	21.6	21.6	0.0	21.6		15.0	15.0		15.0	15.0	
30th %ile Term Code	Gap	Gap	Gap	Skip	Hold		Hold	Hold		Hold	Hold	
10th %ile Green (s)	16.4	16.4	16.4	0.0	16.4		15.0	15.0		15.0	15.0	
10th %ile Term Code	Gap	Gap	Gap	Skip	Hold		Hold	Hold		Hold	Hold	
Stops (vph)	68	692	17	36	222			171			17	
Fuel Used(gal)	1	12	1	1	4			5			0	
CO Emissions (g/hr)	90	844	56	44	254			342			24	
NOx Emissions (g/hr)	18	164	11	9	49			67			5	
VOC Emissions (g/hr)	21	196	13	10	59			79			5	
Dilemma Vehicles (#)	0	61	0	0	29			15			0	
Queue Length 50th (ft)	38	209	0	19	57			107			5	
Queue Length 95th (ft)	80	278	33	50	81			#234			31	
Internal Link Dist (ft)		400			240			896			290	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	463	2004	937	262	2615			434			512	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.26	0.52	0.19	0.17	0.22			0.59			0.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 65			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 16.6		Intersection LOS: B	
Intersection Capacity Utilization 68.8%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 80			
70th %ile Actuated Cycle: 80			
50th %ile Actuated Cycle: 77.6			
30th %ile Actuated Cycle: 46.4			
10th %ile Actuated Cycle: 41.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

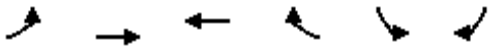
Splits and Phases: 9: New York St/Proj Drwy & Lugonia Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	940	162	40	496	21	169	7	58	8	5	32
Future Volume (veh/h)	110	940	162	40	496	21	169	7	58	8	5	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1758	1660	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	120	1033	178	44	545	23	186	8	64	9	5	35
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	3	3	2	2	2	2	2	2	2	2
Cap, veh/h	477	1431	632	136	1953	82	345	22	88	108	72	277
Arrive On Green	0.42	0.42	0.42	0.09	0.59	0.59	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	843	3367	1486	1581	3292	139	992	90	357	156	295	1128
Grp Volume(v), veh/h	120	1033	178	44	278	290	258	0	0	49	0	0
Grp Sat Flow(s),veh/h/ln	843	1683	1486	1581	1683	1747	1438	0	0	1580	0	0
Q Serve(g_s), s	5.8	15.5	4.8	1.6	4.9	4.9	8.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.8	15.5	4.8	1.6	4.9	4.9	9.9	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	0.72		0.25	0.18		0.71
Lane Grp Cap(c), veh/h	477	1431	632	136	999	1037	455	0	0	458	0	0
V/C Ratio(X)	0.25	0.72	0.28	0.32	0.28	0.28	0.57	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	614	1977	873	260	1404	1457	561	0	0	570	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	14.5	11.4	26.1	6.0	6.0	20.9	0.0	0.0	17.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.2	1.4	0.2	0.1	1.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.1	1.4	0.6	1.3	1.4	3.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	15.3	11.7	27.5	6.2	6.2	22.0	0.0	0.0	18.0	0.0	0.0
LnGrp LOS	B	B	B	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		1331			612			258			49	
Approach Delay, s/veh		14.5			7.7			22.0			18.0	
Approach LOS		B			A			C			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.2	31.1		19.4		41.4		19.4				
Change Period (Y+Rc), s	5.0	5.3		4.5		5.3		4.5				
Max Green Setting (Gmax), s	10.0	35.7		19.5		50.7		19.5				
Max Q Clear Time (g_c+I1), s	3.6	17.5		3.5		6.9		11.9				
Green Ext Time (p_c), s	0.0	8.4		0.2		3.7		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			13.6									
HCM 6th LOS			B									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	67	939	538	9	4	19
Future Volume (vph)	67	939	538	9	4	19
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.887	
Flt Protected	0.950				0.992	
Satd. Flow (prot)	1583	3353	1761	0	1553	0
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	1583	3353	1761	0	1553	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	72	1010	578	10	4	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	1010	588	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	939	538	9	4	19
Future Vol, veh/h	67	939	538	9	4	19
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	1010	578	10	4	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	589	0	-	0	1233	584
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	649	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	984	-	-	-	182	511
Stage 1	-	-	-	-	556	-
Stage 2	-	-	-	-	483	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	983	-	-	-	168	511
Mov Cap-2 Maneuver	-	-	-	-	168	-
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	483	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	983	-	-	-	377
HCM Lane V/C Ratio	0.073	-	-	-	0.066
HCM Control Delay (s)	9	-	-	-	15.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	24	3	14	11	2	2	14	31	2	4	3
Future Volume (vph)	0	24	3	14	11	2	2	14	31	2	4	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.988			0.911			0.955	
Flt Protected					0.975			0.998			0.988	
Satd. Flow (prot)	0	1738	0	0	1710	0	0	1620	0	0	1676	0
Flt Permitted					0.975			0.998			0.988	
Satd. Flow (perm)	0	1738	0	0	1710	0	0	1620	0	0	1676	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1715			965			1320			300	
Travel Time (s)		39.0			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	1%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	31	4	18	14	3	3	18	40	3	5	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	0	0	35	0	0	61	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	24	3	14	11	2	2	14	31	2	4	3
Future Vol, veh/h	0	24	3	14	11	2	2	14	31	2	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	1	2	1	2	1	1	1	1	2
Mvmt Flow	0	31	4	18	14	3	3	18	40	3	5	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	35	0	0	89	86	33	114	87	16
Stage 1	-	-	-	-	-	-	33	33	-	52	52	-
Stage 2	-	-	-	-	-	-	56	53	-	62	35	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.12	6.51	6.21	7.11	6.51	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.518	4.009	3.309	3.509	4.009	3.318
Pot Cap-1 Maneuver	1600	-	-	1583	-	-	896	806	1043	865	805	1063
Stage 1	-	-	-	-	-	-	983	870	-	963	854	-
Stage 2	-	-	-	-	-	-	956	853	-	952	868	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1600	-	-	1583	-	-	881	797	1043	811	796	1063
Mov Cap-2 Maneuver	-	-	-	-	-	-	881	797	-	811	796	-
Stage 1	-	-	-	-	-	-	983	870	-	963	845	-
Stage 2	-	-	-	-	-	-	936	844	-	896	868	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.8	9.1	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	948	1600	-	-	1583	-	-	873
HCM Lane V/C Ratio	0.064	-	-	-	0.011	-	-	0.013
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	9.2
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	39	13	68	16	24	9	269	89	26	190	18
Future Volume (vph)	17	39	13	68	16	24	9	269	89	26	190	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.970			0.967			0.990	
Flt Protected		0.988			0.969			0.999			0.995	
Satd. Flow (prot)	0	1684	0	0	1675	0	0	1720	0	0	1756	0
Flt Permitted		0.988			0.969			0.999			0.995	
Satd. Flow (perm)	0	1684	0	0	1675	0	0	1720	0	0	1756	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	5%	1%	1%	1%	6%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	18	41	14	72	17	25	9	283	94	27	200	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	114	0	0	386	0	0	246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

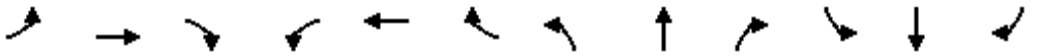
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	39	13	68	16	24	9	269	89	26	190	18
Future Vol, veh/h	17	39	13	68	16	24	9	269	89	26	190	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	3	5	1	1	1	6	1	1	1	1	1
Mvmt Flow	18	41	14	72	17	25	9	283	94	27	200	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	9.8	12.4	10.4
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	25%	63%	11%
Vol Thru, %	73%	57%	15%	81%
Vol Right, %	24%	19%	22%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	367	69	108	234
LT Vol	9	17	68	26
Through Vol	269	39	16	190
RT Vol	89	13	24	18
Lane Flow Rate	386	73	114	246
Geometry Grp	1	1	1	1
Degree of Util (X)	0.5	0.113	0.176	0.331
Departure Headway (Hd)	4.658	5.601	5.575	4.843
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	765	644	647	734
Service Time	2.737	3.605	3.577	2.935
HCM Lane V/C Ratio	0.505	0.113	0.176	0.335
HCM Control Delay	12.4	9.3	9.8	10.4
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	2.8	0.4	0.6	1.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	778	93	86	400	14	105	259	143	20	222	40
Future Volume (vph)	72	778	93	86	400	14	105	259	143	20	222	40
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.995				0.850			0.850
Flt Protected	0.950			0.950				0.986			0.996	
Satd. Flow (prot)	1599	3332	0	1583	3337	0	0	1757	1515	0	1775	1515
Flt Permitted	0.950			0.950				0.778			0.954	
Satd. Flow (perm)	1599	3332	0	1583	3337	0	0	1387	1515	0	1700	1515
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4				78			78
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		426			523			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	76	819	98	91	421	15	111	273	151	21	234	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	917	0	91	436	0	0	384	151	0	255	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												

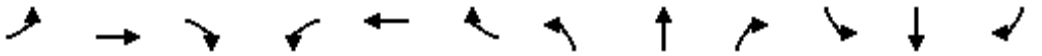
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	14.7	37.0		14.0	36.3		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	16.3%	41.1%		15.6%	40.3%		43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.7	4.7		4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	8.8	26.3		8.8	26.2			26.2	26.2		26.2	26.2
Actuated g/C Ratio	0.12	0.36		0.12	0.36			0.36	0.36		0.36	0.36
v/c Ratio	0.39	0.76		0.47	0.36			0.77	0.25		0.42	0.07
Control Delay	42.3	26.7		45.5	20.2			34.7	11.4		22.0	1.6
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	42.3	26.7		45.5	20.2			34.7	11.4		22.0	1.6
LOS	D	C		D	C			C	B		C	A
Approach Delay		27.9			24.5			28.1			19.1	
Approach LOS		C			C			C			B	
90th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
90th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
70th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
50th %ile Green (s)	9.3	29.3		9.3	29.3		29.3	29.3	29.3	29.3	29.3	29.3
50th %ile Term Code	Gap	Gap		Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	7.5	23.1		8.1	23.7		21.8	21.8	21.8	21.8	21.8	21.8
30th %ile Term Code	Gap	Gap		Gap	Hold		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	0.0	13.7		0.0	13.7		12.5	12.5	12.5	12.5	12.5	12.5
10th %ile Term Code	Skip	Gap		Skip	Hold		Gap	Gap	Gap	Hold	Hold	Hold
Stops (vph)	64	700		75	276			298	48		164	2
Fuel Used(gal)	2	16		2	5			7	1		5	0
CO Emissions (g/hr)	112	1128		118	373			501	102		342	28
NOx Emissions (g/hr)	22	219		23	73			97	20		66	5
VOC Emissions (g/hr)	26	261		27	86			116	24		79	6
Dilemma Vehicles (#)	0	51		0	20			21	0		12	0
Queue Length 50th (ft)	37	212		45	84			172	25		97	0
Queue Length 95th (ft)	85	308		#107	135			#296	68		168	7
Internal Link Dist (ft)		346			443			591			1254	
Turn Bay Length (ft)	105			100					50			50
Base Capacity (vph)	247	1674		227	1634			736	841		902	841

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.31	0.55		0.40	0.27			0.52	0.18		0.28	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 72.9			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 80.8%		ICU Level of Service D	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 90			
70th %ile Actuated Cycle: 90			
50th %ile Actuated Cycle: 82			
30th %ile Actuated Cycle: 67.1			
10th %ile Actuated Cycle: 35.6			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 13: Texas St & Lugonia Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	778	93	86	400	14	105	259	143	20	222	40
Future Volume (veh/h)	72	778	93	86	400	14	105	259	143	20	222	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1673	1772	1786	1786	1786	1786	1786	1786	1786
Adj Flow Rate, veh/h	76	819	98	91	421	15	111	273	151	21	234	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	1	1	1	1	1	1	1
Cap, veh/h	95	991	119	113	1116	40	58	97	648	49	383	648
Arrive On Green	0.06	0.32	0.32	0.07	0.34	0.34	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1606	3052	365	1594	3316	118	0	227	1514	0	895	1514
Grp Volume(v), veh/h	76	455	462	91	213	223	384	0	151	255	0	42
Grp Sat Flow(s),veh/h/ln	1606	1697	1720	1594	1683	1751	227	0	1514	895	0	1514
Q Serve(g_s), s	3.7	19.8	19.8	4.5	7.7	7.7	0.0	0.0	5.1	0.0	0.0	1.3
Cycle Q Clear(g_c), s	3.7	19.8	19.8	4.5	7.7	7.7	34.3	0.0	5.1	34.3	0.0	1.3
Prop In Lane	1.00		0.21	1.00		0.07	0.29		1.00	0.08		1.00
Lane Grp Cap(c), veh/h	95	551	558	113	567	589	155	0	648	432	0	648
V/C Ratio(X)	0.80	0.83	0.83	0.80	0.38	0.38	2.48	0.00	0.23	0.59	0.00	0.06
Avail Cap(c_a), veh/h	201	684	694	185	664	691	155	0	648	432	0	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	25.0	25.0	36.7	20.2	20.2	19.9	0.0	14.5	18.3	0.0	13.5
Incr Delay (d2), s/veh	14.4	6.8	6.7	12.4	0.4	0.4	683.6	0.0	0.2	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	8.5	8.6	2.1	2.9	3.0	31.0	0.0	1.6	3.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	31.8	31.7	49.1	20.6	20.6	703.5	0.0	14.7	20.5	0.0	13.5
LnGrp LOS	D	C	C	D	C	C	F	A	B	C	A	B
Approach Vol, veh/h		993			527			535			297	
Approach Delay, s/veh		33.3			25.5			509.1			19.5	
Approach LOS		C			C			F			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	30.7		39.0	9.4	31.7		39.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 9.3	* 32		* 34	* 10	* 32		* 34				
Max Q Clear Time (g_c+I1), s	6.5	21.8		36.3	5.7	9.7		36.3				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	2.4		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	138.0
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

TENTATIVE PARCEL MAP No. 20469

BEING A SUBDIVISION OF A PORTION OF THE NORTHEAST 1/4 OF SECTION 21, T.1S., R.3W., S.B.M. FOR CONDOMINIUM PURPOSES

EXISTING LEGAL DESCRIPTION

REAL PROPERTY IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL 1 (APN: 0167–171–04–0–000)

THAT PORTION OF THE NORTHEAST 1/2 OF SECTION 21 TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

COMMENCING 60 RODS WEST OF THE SOUTHEAST CORNER OF THE NORTH 1/2 OF SAID SECTION 21; THENCE NORTH 80 RODS; THENCE WEST 20 RODS; THENCE SOUTH 80 RODS; THENCE EAST 20 RODS TO THE POINT OF BEGINNING.

PARCEL 2 (APN: 0167–171–05–0–000)

THE EAST 7 1/2 ACRES OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST OF THE SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE GOVERNMENTAL SURVEY, EXCEPTING ANY PORTION WITHIN LUGONIA AVENUE.

PARCEL 3 (APN: 0167–171–06–0–000)

THE WEST 1/2 OF THE EAST 15 ACRES OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION, 95 RODS WEST OF THE SOUTHEAST CORNER OF SAID 1/4 SECTION; THENCE NORTH 80 RODS; THENCE WEST 15 RODS; THENCE SOUTH 80 RODS; THENCE EAST 15 RODS TO THE BEGINNING.

EXCEPTING THE SOUTH 30 FEET FOR ROAD PURPOSES.

FEMA

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY APPEARS TO BE WITHIN ZONE X OF THE FLOOD INSURANCE RATE MAP, MAP NUMBER 06071C8704H, DATED AUGUST 28, 2008. THE DESIGNATION OF ZONE X INDICATES AN AREA OF MINIMAL FLOOD HAZARD; OR AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

CITY OF REDLANDS ZONING

EV/SD – SPECIAL DEVELOPMENT DISTRICT

BASIS OF BEARINGS

BASIS OF BEARINGS: THE CENTERLINE OF LUGONIA AVE BETWEEN TEXAS ST & THE C 1/4 COR OF SEC 21. BEARING BEING N89°59'57"W PER RS 109/82.

GEOTECHNICAL ENGINEER

MOORE TWINING ASSOCIATES, INC.
2527 FRESNO STREET
FRESNO, CA 93721
(559) 268–7126

RECORD OWNER

REDLANDS SUMMIT LLC
1705 OAK GROVE AVENUE
SAN MARINO, CA 91108

UTILITY PURVEYORS

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ONTARIO, CA 91761
(855) 335–7806

SOCAL GAS
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REDLANDS, CA 92374
(213) 244–1200

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35 CAJON STREET, SUITE 15A
REDLANDS, CA 92373
(909) 798–7585

FRONTIER
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REDLANDS, CA 92373
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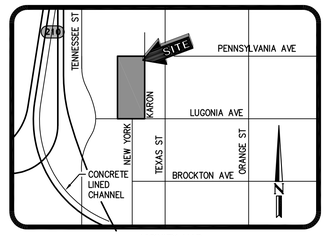
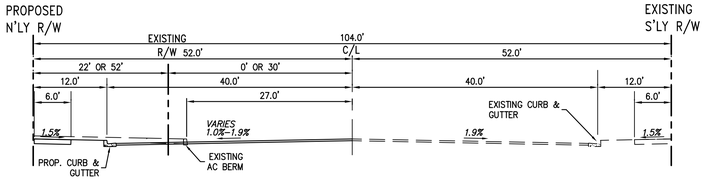
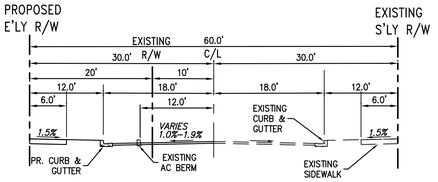
SOUTHERN CALIFORNIA EDISON
287 TENNESSEE STREET
REDLANDS, CA 92373
(909) 307–6740



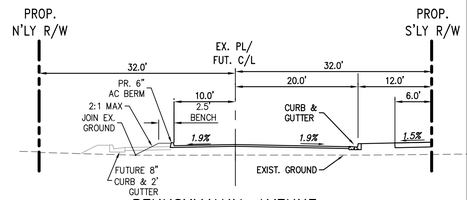
VICINITY MAP
NOT TO SCALE



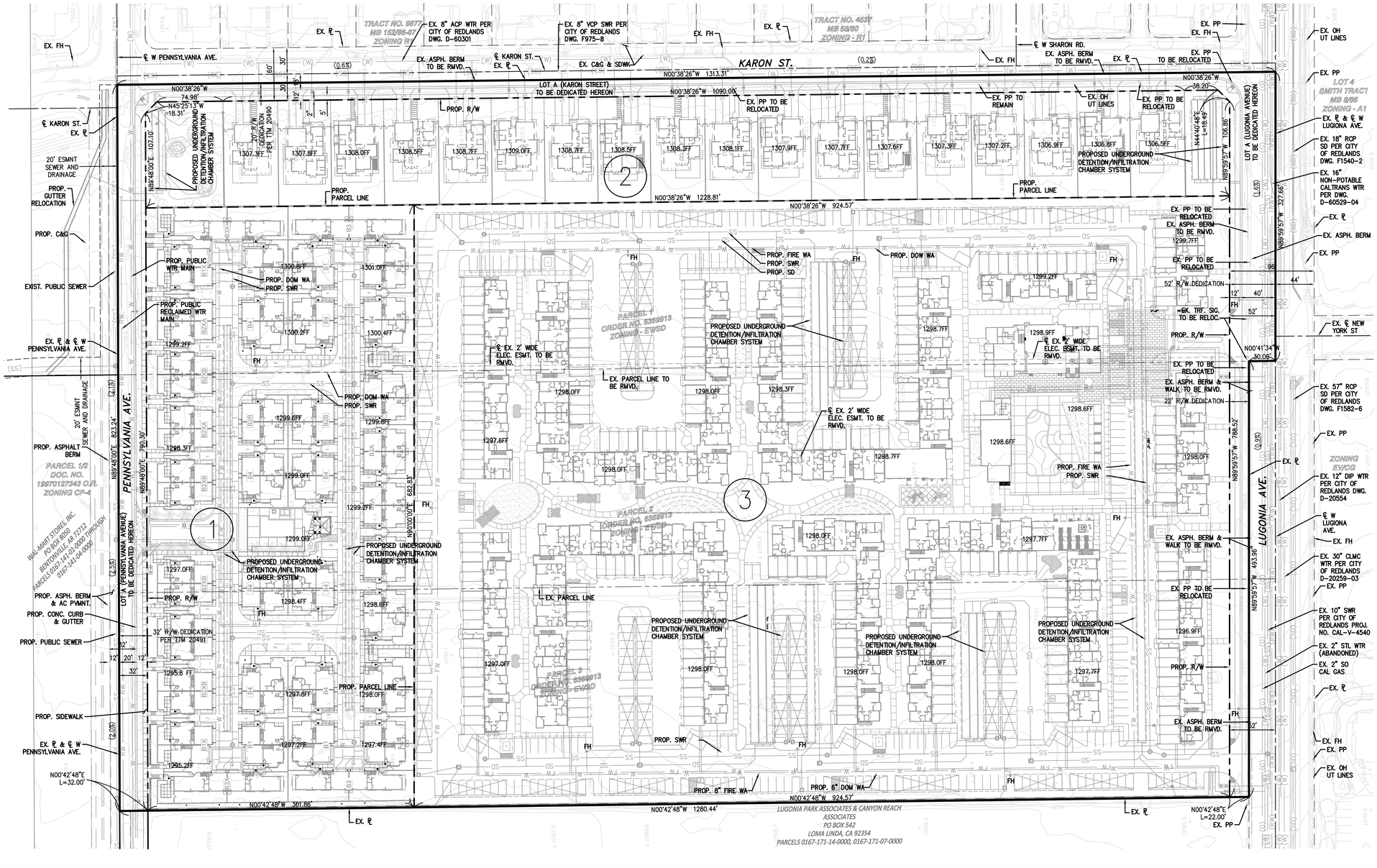
LUGONIA AVENUE



KARON STREET



PENNSYLVANIA AVENUE



AREA SUMMARY:

	AREA (ACRES)
GROSS	24.427
NET	22.610

PARCEL SUMMARY

PARCEL NO.	AREA (ACRES)	PARCEL USE
①	4.751	CONDOMINIUM PURPOSES
②	3.379	SINGLE–FAMILY HOMES
③	14.480	APARTMENT PURPOSES
TOTAL	*22.610*	–

LINE LEGEND

- PARCEL MAP BOUNDARY/ PROPOSED RIGHT–OF–WAY
- EXISTING PROPERTY LINE/RIGHT–OF–WAY
- CENTER LINE
- EXISTING PARCEL LINE
- PROPOSED PARCEL LINE
- SEWER
- STORM DRAIN
- WATER
- FIRE WATER
- EXISTING FENCE
- PROPOSED WALL
- EXISTING WATER COURSE
- PROPOSED PARCEL NUMBER
- EXISTING CONTOUR
- PROPOSED CONTOUR

GRAPHIC SCALE: 1"=50'

PREPARED BY:
JDRC Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning
160 S. Old Springs Road
Suite 210
Anaheim Hills, CA 92808
714–685–6860
5/29/2023
DATE
74414
R.C.E. No.
CHRISTOPHER MCKEE

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER MCKEE No. 74414 Exp. 9–30–23 CIVIL STATE OF CALIFORNIA

NOT FOR CONSTRUCTION

NO.:	REVISION:	DATE:

PROJECT: **TENTATIVE PARCEL MAP No. 20469**
THE NEIGHBORHOODS AT LUGONIA VILLAGE
REDLANDS, CALIFORNIA
DRAWING NAME: **TENTATIVE PARCEL MAP**

ISSUE:	TENTATIVE MAP
DATE:	06/29/2023
CHECKED: LI	DRAWN: LI
DRAWING FILE:	
PROJECT NO.:	**21-086**
SHEET NUMBER:	**1**
OF	1 SHEETS
SCALE:	**AS SHOWN**

FILENAME: M:\2021\21-086 Summit Homes Redlands\TPM & TM\21086 TPM20469.dwg, LAST SAVED ON: Jun 29 2023 10:56am PLOTTED BY: HOMER, ON: Jun 29 2023 11:13am, CFC

TENTATIVE TRACT MAP No. 20490

BEING A SUBDIVISION OF PARCEL MAP NO. 20469 AS PER MAP FILED IN BOOK ____, PAGES ___ TO ___ , RECORDS OF SAN BERNARDINO COUNTY

EXISTING LEGAL DESCRIPTION

REAL PROPERTY IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL 1 (APN: 0167-171-04-0-000)

THAT PORTION OF THE NORTHEAST 1/2 OF SECTION 21 TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

COMMENCING 60 RODS WEST OF THE SOUTHEAST CORNER OF THE NORTH 1/2 OF SAID SECTION 21; THENCE NORTH 80 RODS; THENCE WEST 20 RODS; THENCE SOUTH 80 RODS; THENCE EAST 20 RODS TO THE POINT OF BEGINNING.

PARCEL 2 (APN: 0167-171-05-0-000)

THE EAST 7 1/2 ACRES OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST OF THE SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE GOVERNMENTAL SURVEY, EXCEPTING ANY PORTION WITHIN LUGONIA AVENUE.

PARCEL 3 (APN: 0167-171-06-0-000)

THE WEST 1/2 OF THE EAST 15 ACRES OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE SOUTH LINE OF THE NORHTEAST 1/4 OF SAID SECTION, 95 RODS WEST OF THE SOUTHEAST CORNER OF SAID 1/4 SECTION; THENCE NORTH 80 RODS; THENCE WEST 15 RODS; THENCE SOUTH 80 RODS; THENCE EAST 15 RODS TO THE BEGINNING.

EXCEPTING THE SOUTH 30 FEET FOR ROAD PURPOSES.

FEMA

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY APPEARS TO BE WITHIN ZONE X OF THE FLOOD INSURANCE RATE MAP, MAP NUMBER 06071C8704H, DATED AUGUST 28, 2008. THE DESIGNATION OF ZONE X INDICATES AN AREA OF MINIMAL FLOOD HAZARD; OR AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

CITY OF REDLANDS ZONING

SPECIFIC PLAN: EV/SD – SPECIAL DEVELOPMENT DISTRICT

BASIS OF BEARINGS

BASIS OF BEARINGS: THE CENTERLINE OF LUGONIA AVE BETWEEN TEXAS ST & THE C 1/4 COR OF SEC 21. BEARING BEING N89°59'57"W PER RS 109/82.

GEOTECHNICAL ENGINEER

MOORE TWINING ASSOCIATES, INC.
2527 FRESNO STREET
FRESNO, CA 93721
(559) 268-7126

RECORD OWNER

REDLANDS SUMMIT LLC
1705 OAK GROVE AVENUE
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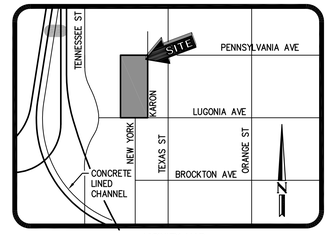
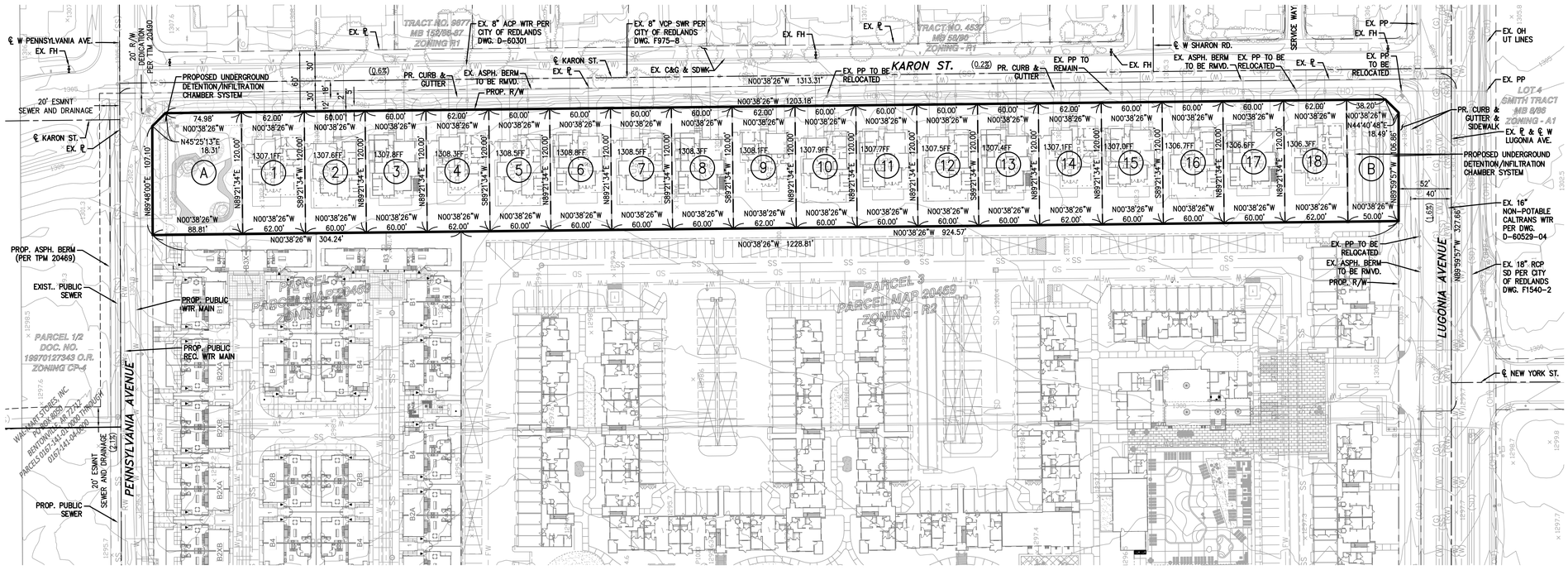
CITY OF REDLANDS MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT (WATER/SEWER)
35 CAJON STREET, SUITE 15A
REDLANDS, CA 92373
(909) 798-7585



VICINITY MAP
NOT TO SCALE

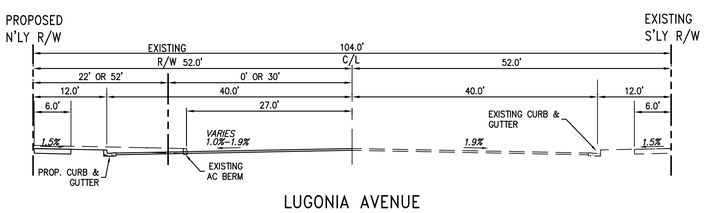


LOT SUMMARY

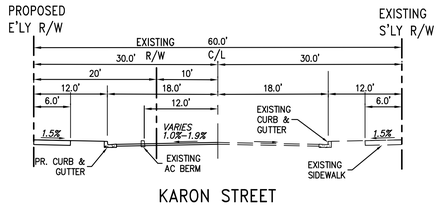
LOT NO.	AREA (SQ.-FT.)	AREA (ACRES)	LOT USE
1	7,440	0.171	SINGLE-FAMILY HOME
2	7,200	0.165	SINGLE-FAMILY HOME
3	7,200	0.165	SINGLE-FAMILY HOME
4	7,440	0.171	SINGLE-FAMILY HOME
5	7,200	0.165	SINGLE-FAMILY HOME
6	7,200	0.165	SINGLE-FAMILY HOME
7	7,200	0.165	SINGLE-FAMILY HOME
8	7,200	0.165	SINGLE-FAMILY HOME
9	7,440	0.171	SINGLE-FAMILY HOME
10	7,200	0.165	SINGLE-FAMILY HOME
11	7,200	0.165	SINGLE-FAMILY HOME
12	7,200	0.165	SINGLE-FAMILY HOME
13	7,200	0.165	SINGLE-FAMILY HOME
14	7,440	0.171	SINGLE-FAMILY HOME
15	7,200	0.165	SINGLE-FAMILY HOME
16	7,200	0.165	SINGLE-FAMILY HOME
17	7,200	0.165	SINGLE-FAMILY HOME
18	7,440	0.171	SINGLE-FAMILY HOME
A	10,518	0.241	SINGLE-FAMILY HOME
B	5,995	0.138	SINGLE-FAMILY HOME
TOTAL	130,800	3.379	–

LINE LEGEND

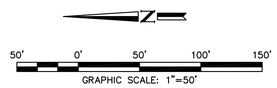
- PARCEL MAP BOUNDARY/ PROPOSED RIGHT-OF-WAY
- PROPOSED PROPERTY LINE/RIGHT-OF-WAY
- EXISTING PROPERTY LINE/RIGHT-OF-WAY
- CENTER LINE
- EXISTING PARCEL LINE
- PROPOSED LOT LINE
- SEWER (S)
- STORM DRAIN (SD)
- WATER (W)
- FIRE WATER (FW)
- EXISTING FENCE
- PROPOSED WALL
- EXISTING WATER COURSE
- PROPOSED PARCEL NUMBER (#)
- EXISTING CONTOUR (XXX)
- PROPOSED CONTOUR (XXX)



LUGONIA AVENUE



KARON STREET



160 S. Old Springs Road
Suite 210
Anaheim Hills, CA 92808
714-685-6860
Civil Engineering/Land Surveying/Land Planning
PREPARED BY: JDRC Engineering, Inc.
CHRISTOPHER McKEE R.C.E. 74414

8/17/2022 DATE

NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER J. McKEE No. 74414 Exp. 9-30-23 CIVIL STATE OF CALIFORNIA

DATE:

NO.: REVISION:

PROJECT: TENTATIVE TRACT MAP No. 20490
THE NEIGHBORHOODS AT LUGONIA VILLAGE
REDLANDS, CALIFORNIA

DRAWING NAME: TENTATIVE TRACT MAP

ISSUE:	TENTATIVE MAP
DATE:	06/29/2023
CHECKED: LJ	DRAWN: LJ
DRAWING FILE:	
PROJECT NO.:	21-086
SHEET NUMBER:	1
OF	1 SHEETS
SCALE:	AS SHOWN

FILENAME: M:\2021\21-086 Summit Homes Redlands\TM & TM\21086 TM20490.dwg, LAST SAVED ON: Jun 28 2023 10:06am PLOTTED BY: HOMER, ON: Jun 29 2023 11:17am, CFG:

TENTATIVE TRACT MAP No. 20491

BEING A SUBDIVISION OF PARCEL MAP NO. 20469 AS PER MAP FILED IN BOOK ____, PAGES __ TO ___ , RECORDS OF SAN BERNARDINO COUNTY for CONDOMINIUM PURPOSES

EXISTING LEGAL DESCRIPTION

REAL PROPERTY IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL 1 (APN: 0167-171-04-0-000)

THAT PORTION OF THE NORTHEAST 1/2 OF SECTION 21 TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

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EXCEPTING THE SOUTH 30 FEET FOR ROAD PURPOSES.

FEMA

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CITY OF REDLANDS ZONING

EV/SD – SPECIAL DEVELOPMENT DISTRICT

BASIS OF BEARINGS

BASIS OF BEARINGS: THE CENTERLINE OF LUGONIA AVE BETWEEN TEXAS ST & THE C 1/4 COR OF SEC 21. BEARING BEING N89°59'57"W PER RS 109/82.

GEOTECHNICAL ENGINEER

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RECORD OWNER

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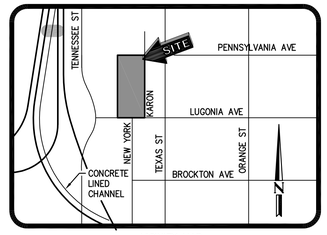
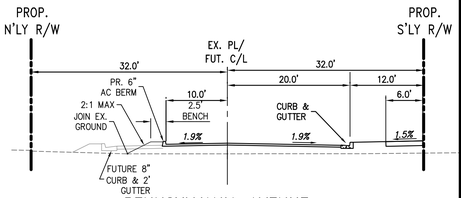
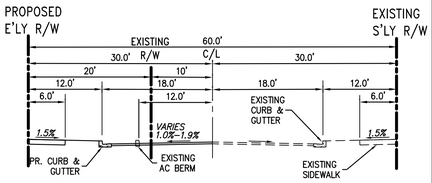


VICINITY MAP
NOT TO SCALE



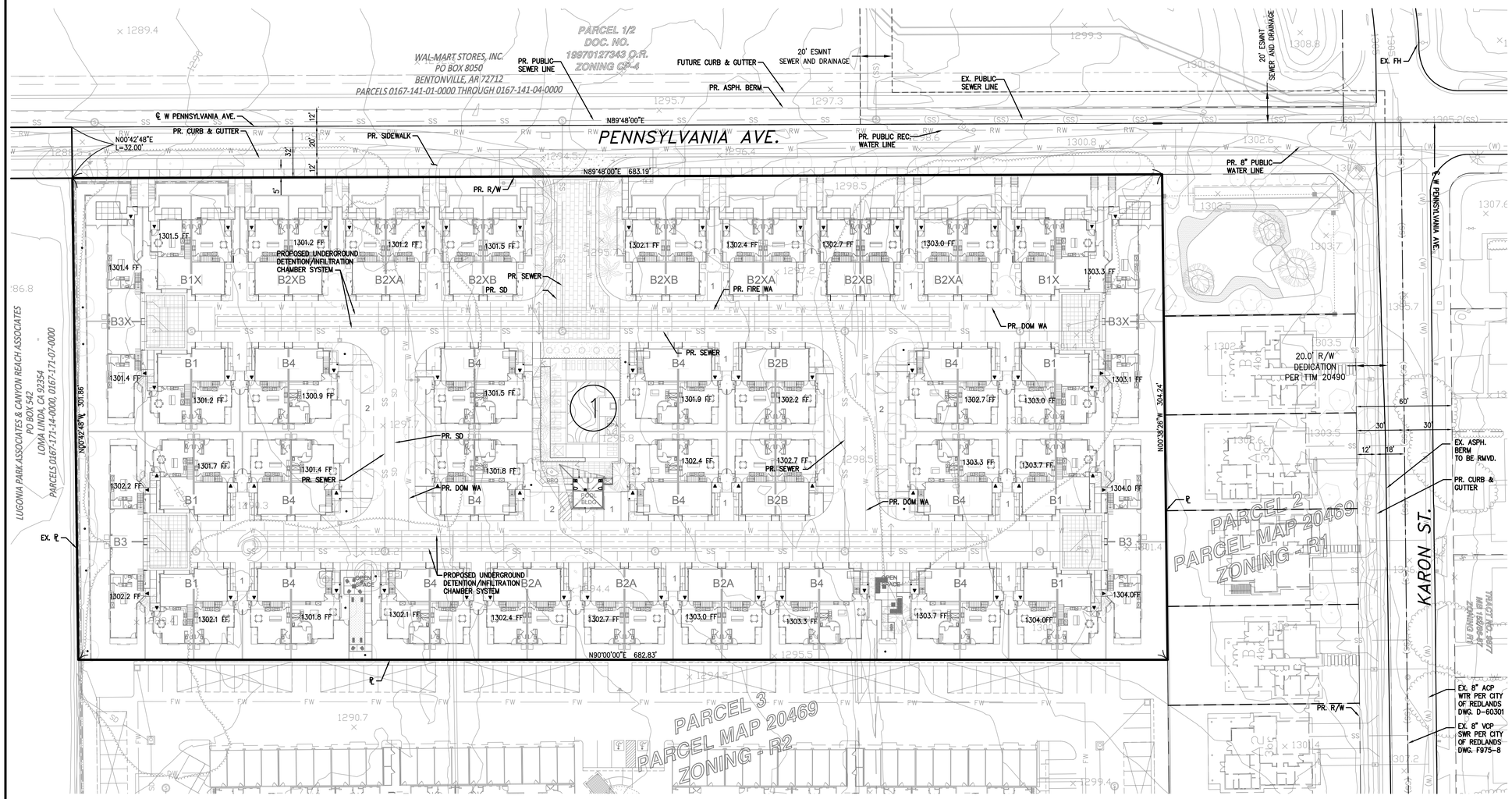
PENNSYLVANIA AVENUE



KARON STREET

LOT SUMMARY

LOT NO.	AREA (ACRES)	PARCEL USE
1	4.751	CONDOMINIUM PURPOSES



LINE LEGEND

- PARCEL MAP BOUNDARY/ PROPOSED RIGHT-OF-WAY
- PROPOSED PROPERTY LINE/RIGHT-OF-WAY
- EXISTING PROPERTY LINE/RIGHT-OF-WAY
- CENTER LINE
- EXISTING PARCEL LINE
- PROPOSED LOT LINE
- SEWER
- STORM DRAIN
- WATER
- FIRE WATER
- EXISTING FENCE
- PROPOSED WALL
- EXISTING WATER COURSE
- PROPOSED LOT NUMBER
- EXISTING CONTOUR
- PROPOSED CONTOUR

30' 0' 30' 60' 90'
GRAPHIC SCALE: 1"=30'

160 S. Old Springs Road
Suite 210
Anaheim Hills, CA 92808
714-685-6860

PREPARED BY: IDRC Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning
CHRISTOPHER MCKEE R.C.E. 74414
8/17/2022 DATE

NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER MCKEE No. 74414 Exp. 9-30-23 CIVIL STATE OF CALIFORNIA

NO.:	REVISION:	DATE:

PROJECT: TENTATIVE TRACT MAP No. 20491
THE NEIGHBORHOODS AT LUGONIA VILLAGE
REDLANDS, CALIFORNIA

DRAWING NAME: TENTATIVE TRACT MAP

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DATE:	06/29/2023
CHECKED: LI	DRAWN: LI
DRAWING FILE:	
PROJECT NO.:	21-086
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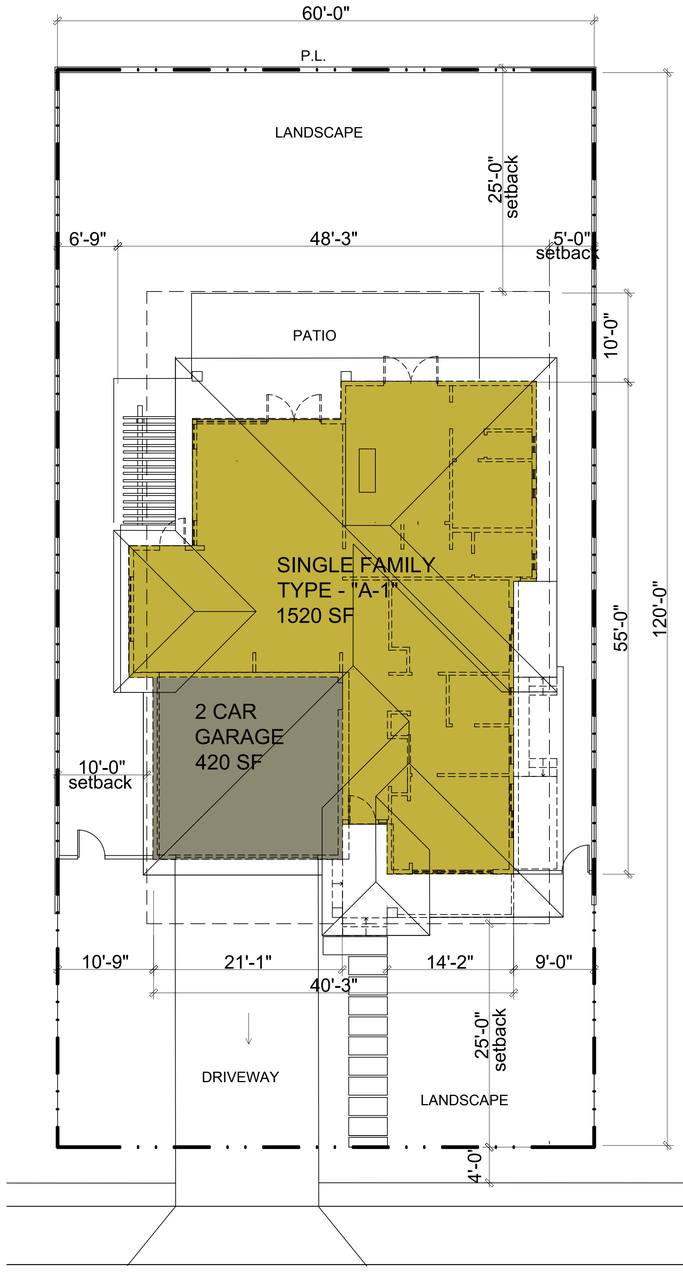


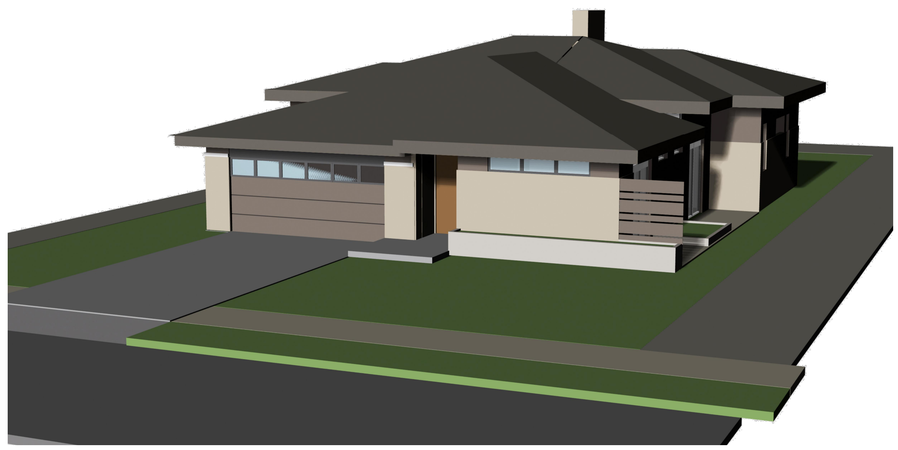
KARON ST.

SITE PLAN

1/8'=1'-0"



UNIT "A-1"- TOP STREET VIEW



UNIT "A-1"- STREET VIEW

LOT SIZE - 7,200sf
DIM. - 60'X 120'

PROPOSED:
BLDG. TYPE "A-1"

TYPE: - 3br & 3.5bath
SQ. FOOTAGE: - 1,520sf

PARKING: - 2 car garage
SQ.FOOTAGE: - 420sf

BUILT AREA: - 1,940sf

PATIOS: - 630sf

DRIVE WAY - 516sf

LOT COVERAGE:
including:
- residence - 1520sf
- 2 car garage - 420sf
- covered patio - 210sf

total covered area - 2,150sf (*29.8%*)

HEIGHT: - 18'- 4"

SINGLE FAMILY
TYPE - "A-1"
3 BR & 2.5 BATHS

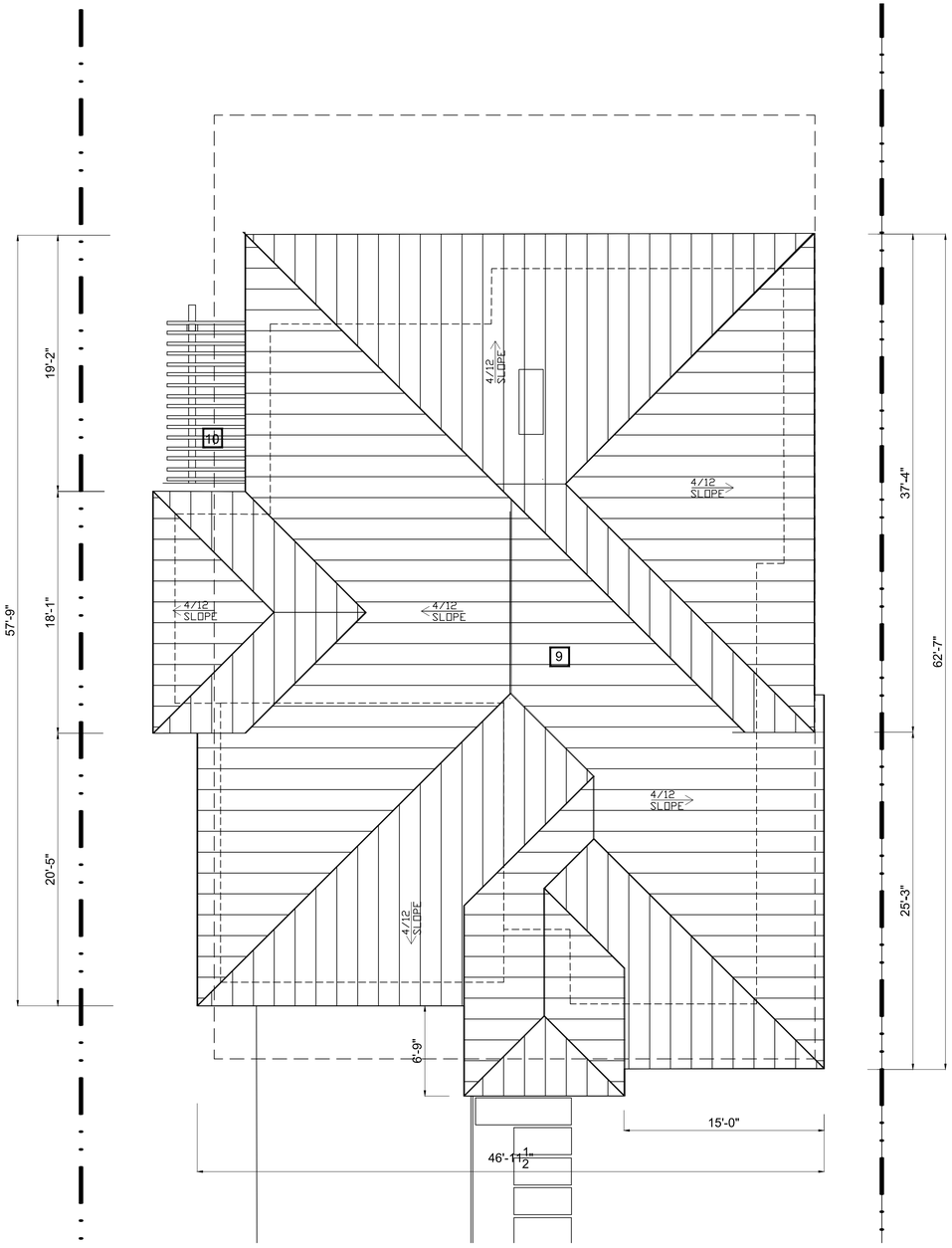
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

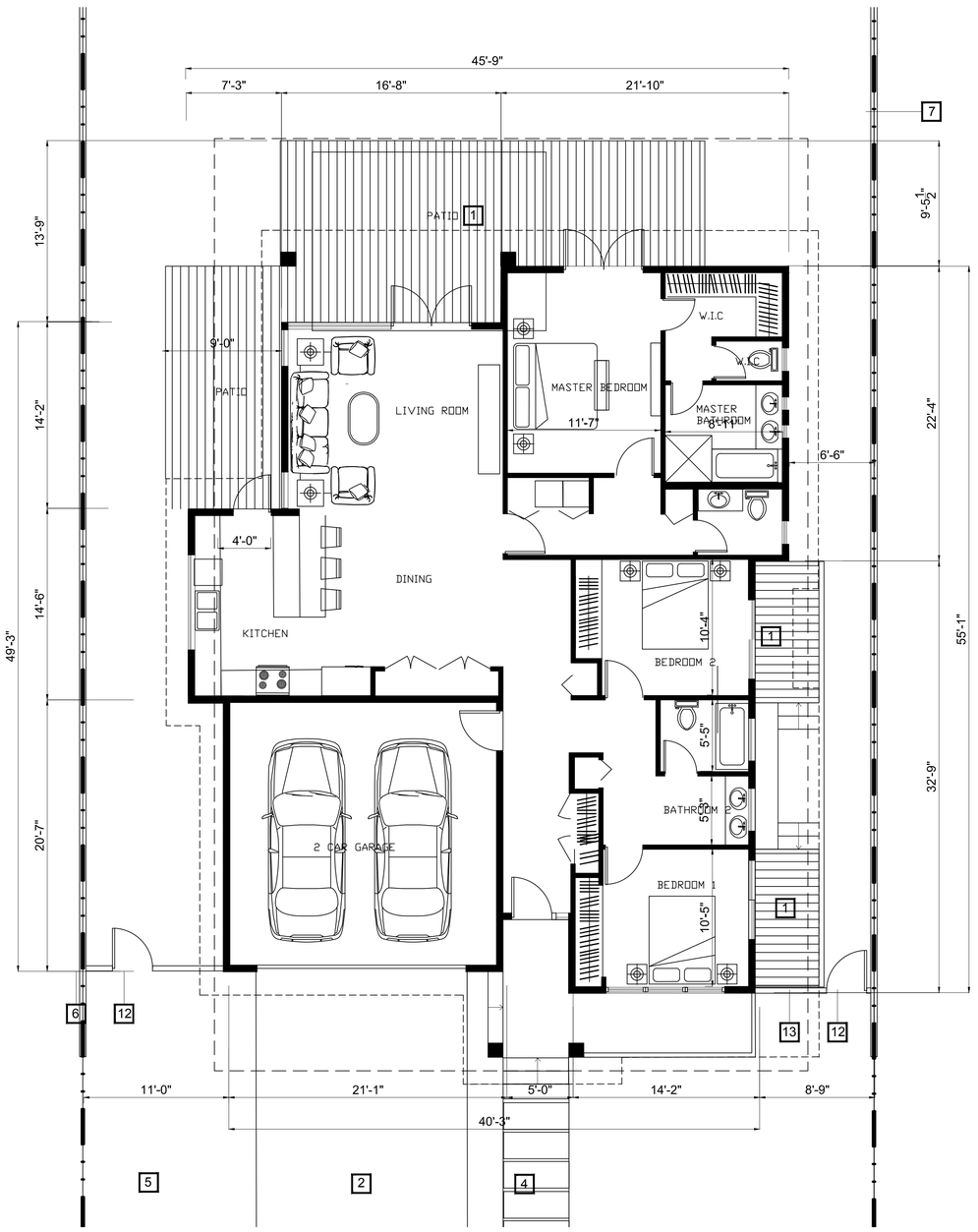
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

SF-1.0



ROOF PLAN

3/16'=1'-0"



FLOOR PLAN

3/16'=1'-0"

MATERIAL LEGEND

1. COMPOSITE WOOD DECK - BY "TREX"
2. CONCRETE INTERLOCKING PAVERS
3. STAMPED CONCRETE
4. PRECAST CONCRETE PAVERS
5. GRASS CRETE
6. CMU SPLIT FACE WALL
7. VINYL FENCE
8. FLAT CONCRETE ROOF TILE - DARK "BELL AIR" BY EAGLE (ICC-ESR-1900)
9. ASPHALT SHINGLES BY "IKO"
10. WOOD TRELLIS REDWOOD - PAINTED
11. WOOD RAILING - PAINTED
12. METAL DOOR - PAINTED
13. WOOD PLANKS SCREEN WALL

LEGEND

- WALL
- STRUCTURE ABOVE
- PROPERTY LINE
- SETBACK LINE

SINGLE FAMILY
TYPE - "A-1"
3 BR & 2.5 BATHS

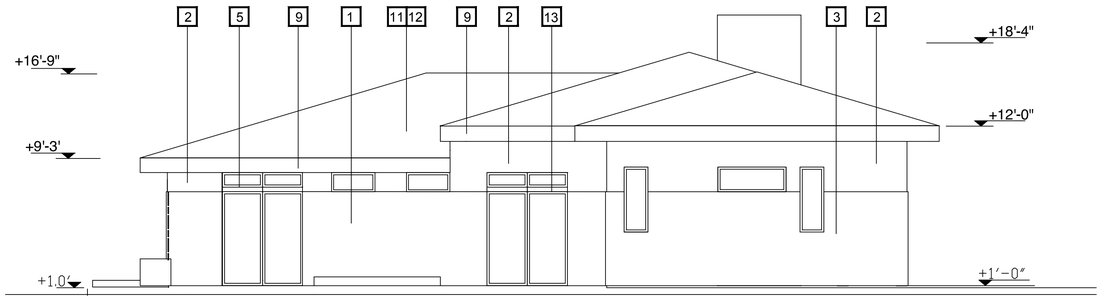
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

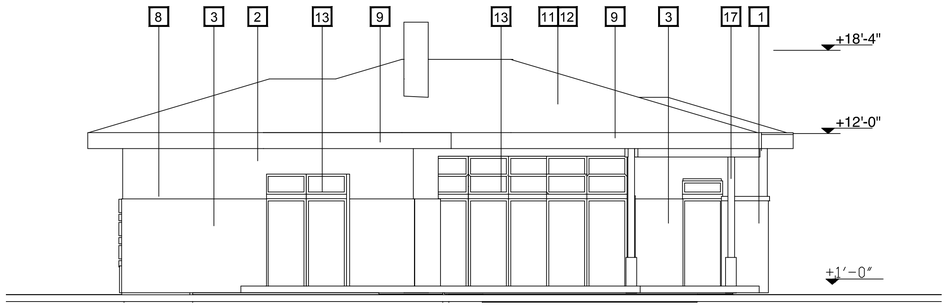
SF-1.1

REDLANDS SUMMIT LLC
1705 OAK GROVE AVE., SAN MARINO, CA 91108
(626) 360-2888



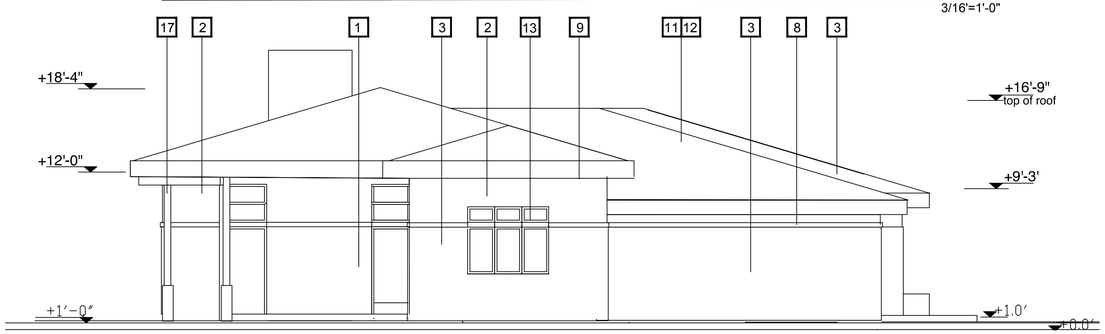
UNIT "A-1"- RIGHT SIDE ELEVATION

3/16'=1'-0"



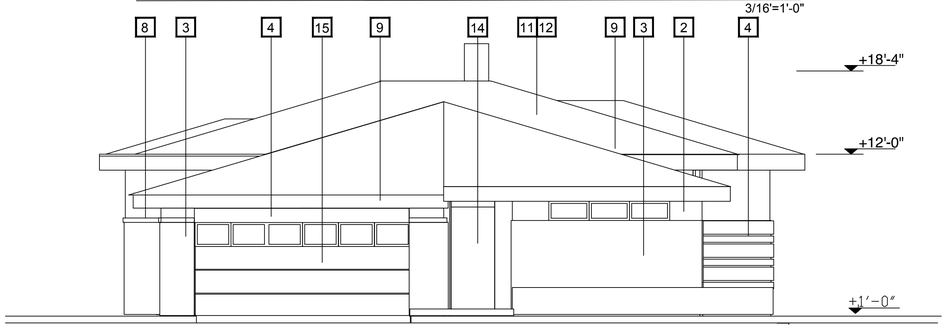
UNIT "A-1"- BACK ELEVATION

3/16'=1'-0"



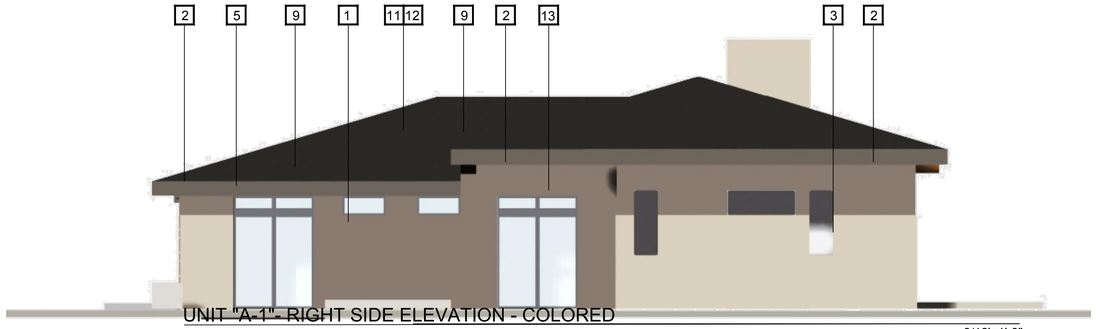
UNIT "A-1"- LEFT SIDE ELEVATION

3/16'=1'-0"



UNIT "A-1"- STREET ELEVATION

3/16'=1'-0"



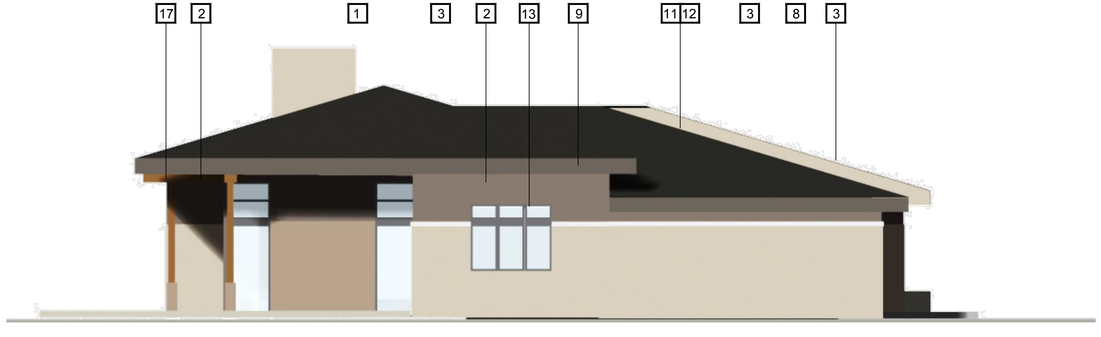
UNIT "A-1"- RIGHT SIDE ELEVATION - COLORED

3/16'=1'-0"



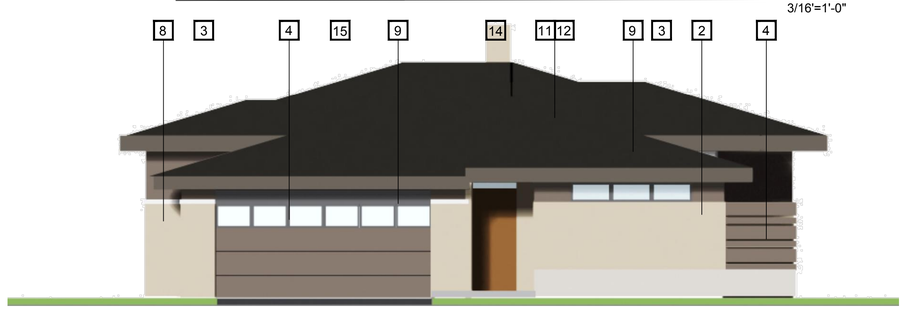
UNIT "A-1"- BACK ELEVATION - COLORED

3/16'=1'-0"



UNIT "A-1"- LEFT SIDE ELEVATION - COLORED

3/16'=1'-0"



UNIT "A-1"- STREET ELEVATION - COLORED

3/16'=1'-0"

MATERIAL LEGEND

1. EXTERIOR CEMENT PLASTER 1 - SAND FINISH COLOR BY LA HABRA "FALLBROOK"
2. EXTERIOR CEMENT PLASTER 2 - SAND FINISH BY LA HABRA "CORAL GABLES"
3. EXTERIOR CEMENT PLASTER 2 - SAND FINISH BY LA HABRA - "SILVERADO"
4. ARTIFICIAL WOOD SIDING BY "NEWTECKWOOD"
5. "HARDY" PLANKS
6. STONE VENEER - "ALASKA SUNSET"
7. BRICK VENEER
8. TRIM
9. WOOD FACIA - PAINTED
10. METAL CLADDING PAINTED - BY BENJAMIN MOOR"WORTH IRON" BLACK
11. FLAT CONCRETE ROOF TILE - DARK "BELL AIR" BY EAGLE (ICC-ESR-1900)
12. ASPHALT SHINGLES BY "IKO"
13. WINDOWS - PER WINDOW SCHEDULE BY ANDERSEN(OR EQ.)COLONIAL STYLE - "COCOA BEAN"
14. SOLID WOOD DOOR TREATED OR PAINTED
15. WOOD - GARAGE DOOR
16. WOOD TRELLIS TREATED MAHOGANY- CLEAR
17. WOOD COLUMN TREATED OR PAINTED

KEY NOTES



SINGLE FAMILY
TYPE - "A-1"
3 BR & 2.5 BATHS

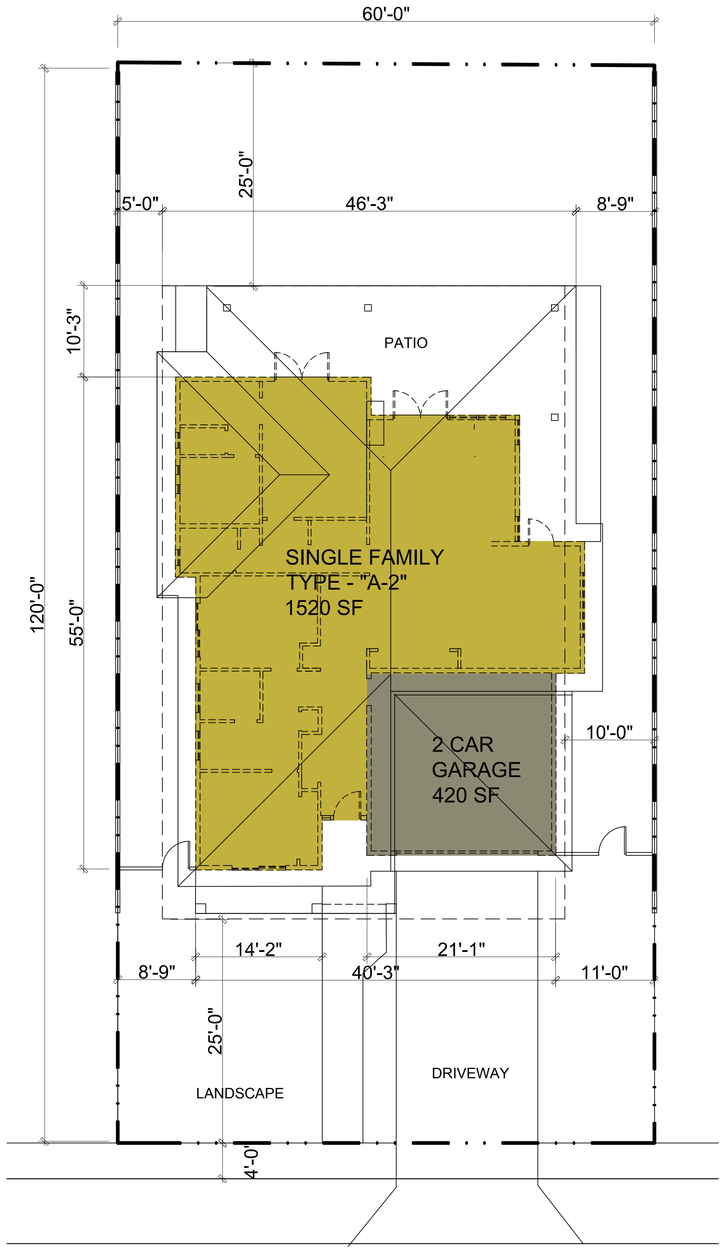
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

SF-1.2

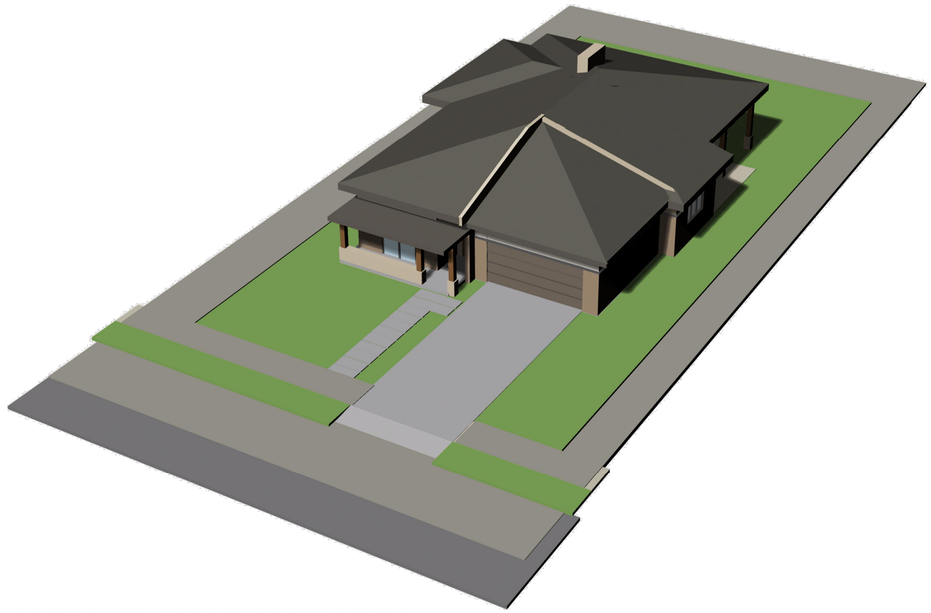
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



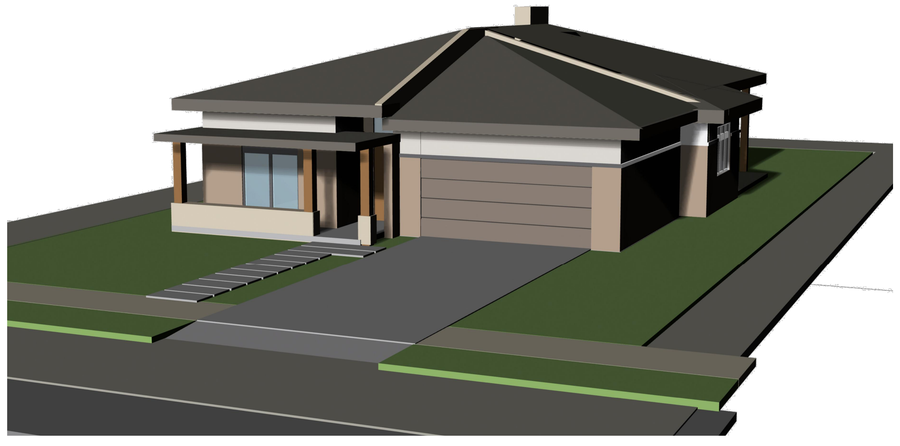
KARON ST.

SITE PLAN

1/8'=1'-0"



UNIT "A-2"- TOP STREET VIEW



UNIT "A-2"- STREET VIEW

LOT SIZE - 7,200sf
DIM. - 60'X 120'

PROPOSED:
BLDG. TYPE "A-2"

TYPE: - 3br & 3.5bath
SQ. FOOTAGE: - 1,520sf

PARKING: - 2 car garage
SQ.FOOTAGE: - 420sf

BUILT AREA: - 1,940sf

PATIOS: - 670sf
PORCH - 70sf
DRIVE WAY - 516sf

LOT COVERAGE:
including:
- residence - 1520sf
- 2 car garage - 420sf
- covered patio - 230sf

total covered area - 2,170sf (*30%*)

HEIGHT: - 19'- 3"

SINGLE FAMILY
TYPE - "A-2"
3 BR & 2.5 BATHS

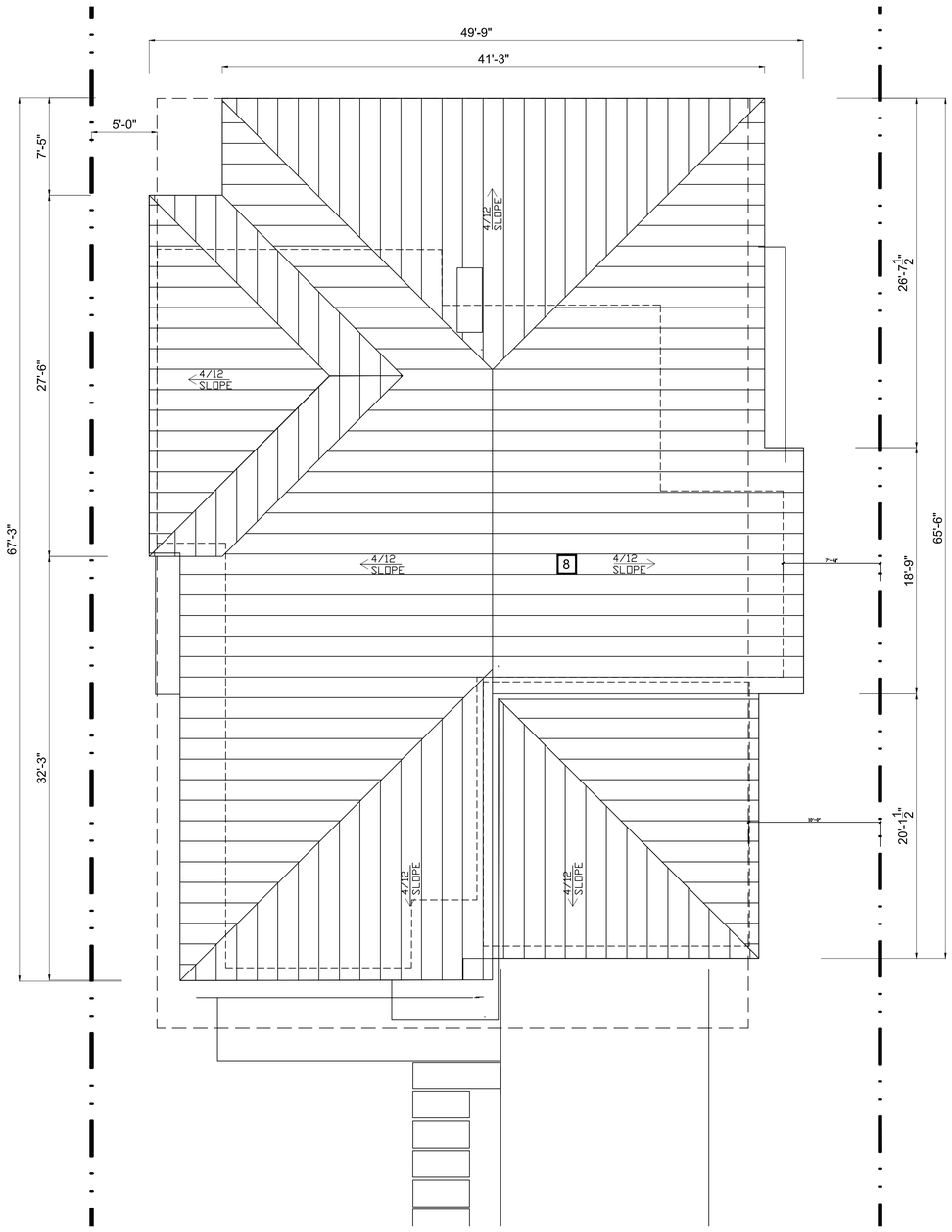
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

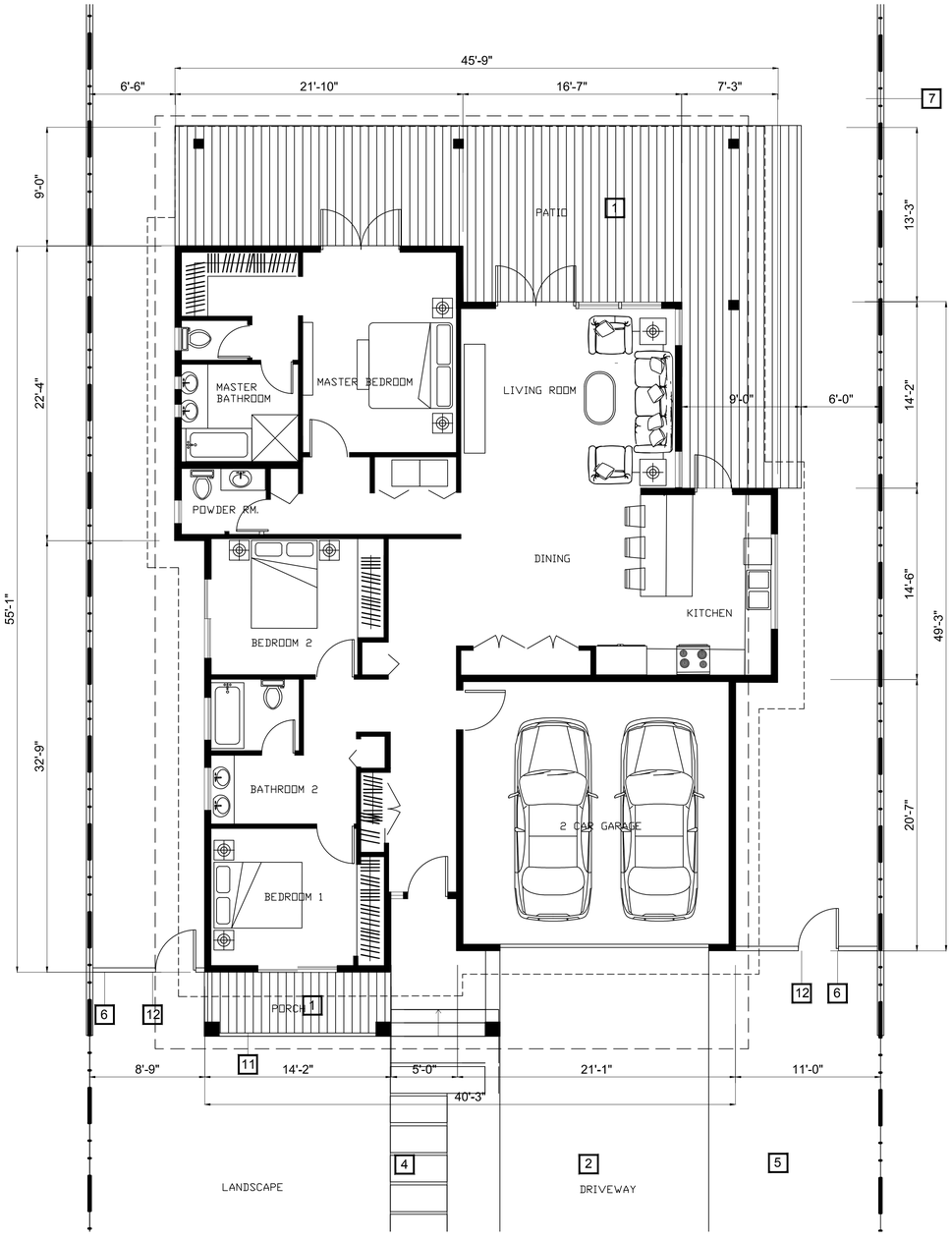
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

SF-2.0



ROOF PLAN

3/16'=1'-0"



FLOOR PLAN

3/16'=1'-0"

MATERIAL LEGEND

1. COMPOSITE WOOD DECK - BY "TREX"
2. CONCRETE INTERLOCKING PAVERS
3. STAMPED CONCRETE
4. PRECAST CONCRETE PAVERS
5. GRASS CRETE
6. CMU SPLIT FACE WALL
7. VINYL FENCE
8. FLAT CONCRETE ROOF TILE - DARK "BELL AIR" BY EAGLE (ICC-ESR-1900)
9. ASPHALT SHINGLES BY "IKO"
10. WOOD TRELLIS TREATED MAHOGANY- CLEAR
11. WOOD RAILING
12. METAL DOOR - PAINTED
13. WOOD PLANKS SCREEN WALL

LEGEND

- WALL
- STRUCTURE ABOVE
- PROPERTY LINE
- SETBACK LINE

SINGLE FAMILY
TYPE - "A-2"
3 BR & 2.5 BATHS

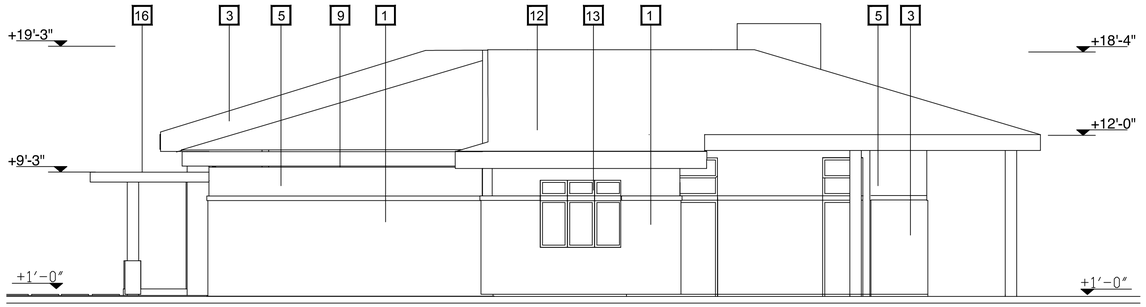
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

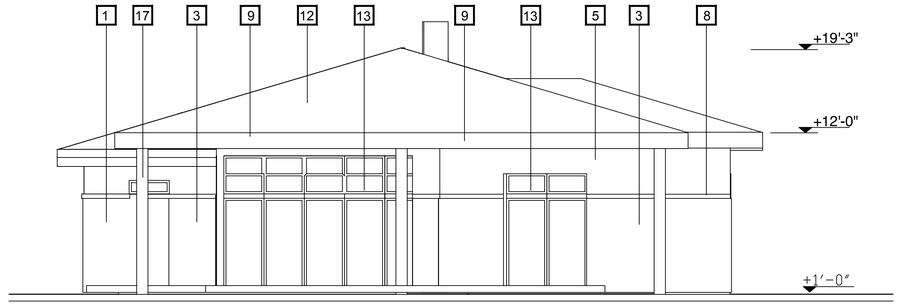
SF-2.1

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



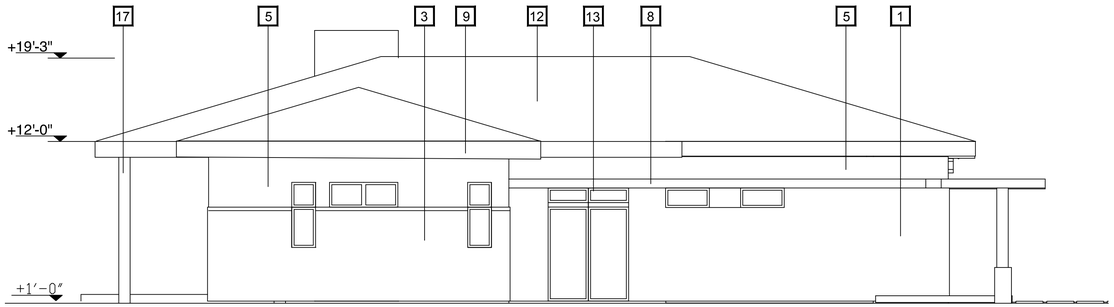
UNIT "A-2"- RIGHT SIDE ELEVATION

3/16"=1'-0"



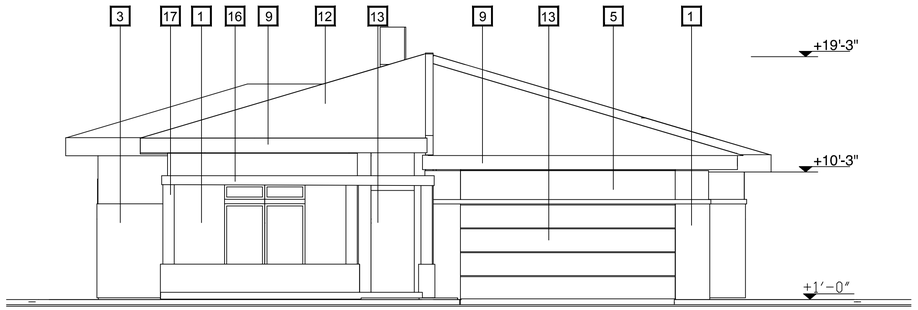
UNIT "A-2"- BACK ELEVATION

3/16"=1'-0"



UNIT "A-2"- LEFT SIDE ELEVATION

3/16"=1'-0"



UNIT "A-2"- STREET ELEVATION

3/16"=1'-0"

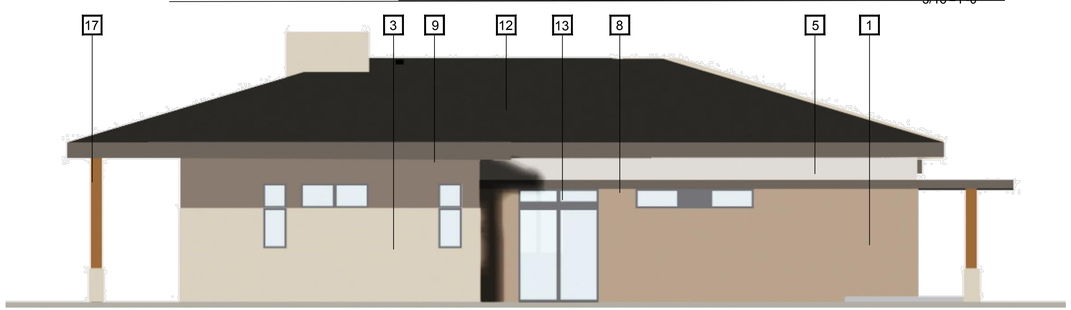


UNIT "A-2"- RIGHT SIDE ELEVATION - COLORED

3/16"=1'-0"

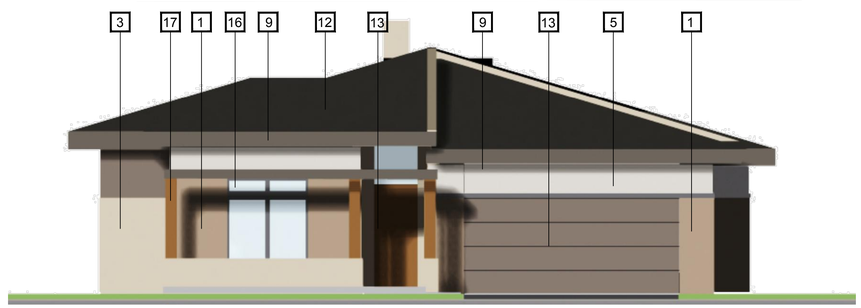


UNIT "A-2"- BACK ELEVATION - COLORED



UNIT "A-2"- LEFT SIDE ELEVATION - COLORED

3/16"=1'-0"



UNIT "A-2"- STREET ELEVATION - COLORED

3/16"=1'-0"

MATERIAL LEGEND

1. EXTERIOR CEMENT PLASTER 1 - SAND FINISH COLOR BY LA HABRA "FALLBROOK"
2. EXTERIOR CEMENT PLASTER 2 - SAND FINISH BY LA HABRA "CORAL GABLES"
3. EXTERIOR CEMENT PLASTER 2 - SAND FINISH BY LA HABRA - "SILVERADO"
4. ARTIFICIAL WOOD SIDING BY "NEWTECKWOOD"
5. "HARDY" PLANKS
6. STONE VENEER - "ALASKA SUNSET"
7. BRICK VENEER
8. TRIM
9. WOOD FACIA - PAINTED
10. METAL CLADDING PAINTED - BY BENJAMIN MOOR"WORTH IRON" BLACK
11. FLAT CONCRETE ROOF TILE - DARK "BELL AIR" BY EAGLE (ICC-ESR-1900)
12. ASPHALT SHINGLES BY "IKO"
13. WINDOWS - PER WINDOW SCHEDULE BY ANDERSEN(OR EQ.)COLONIAL STYLE - "COCOA BEAN"
14. SOLID WOOD DOOR TREATED OR PAINTED
15. WOOD - GARAGE DOOR
16. WOOD TRELLIS TREATED MAHOGANY- CLEAR
17. WOOD COLUMN TREATED OR PAINTED

KEY NOTES



SINGLE FAMILY
TYPE - "A-2"
3 BR & 2.5 BATHS

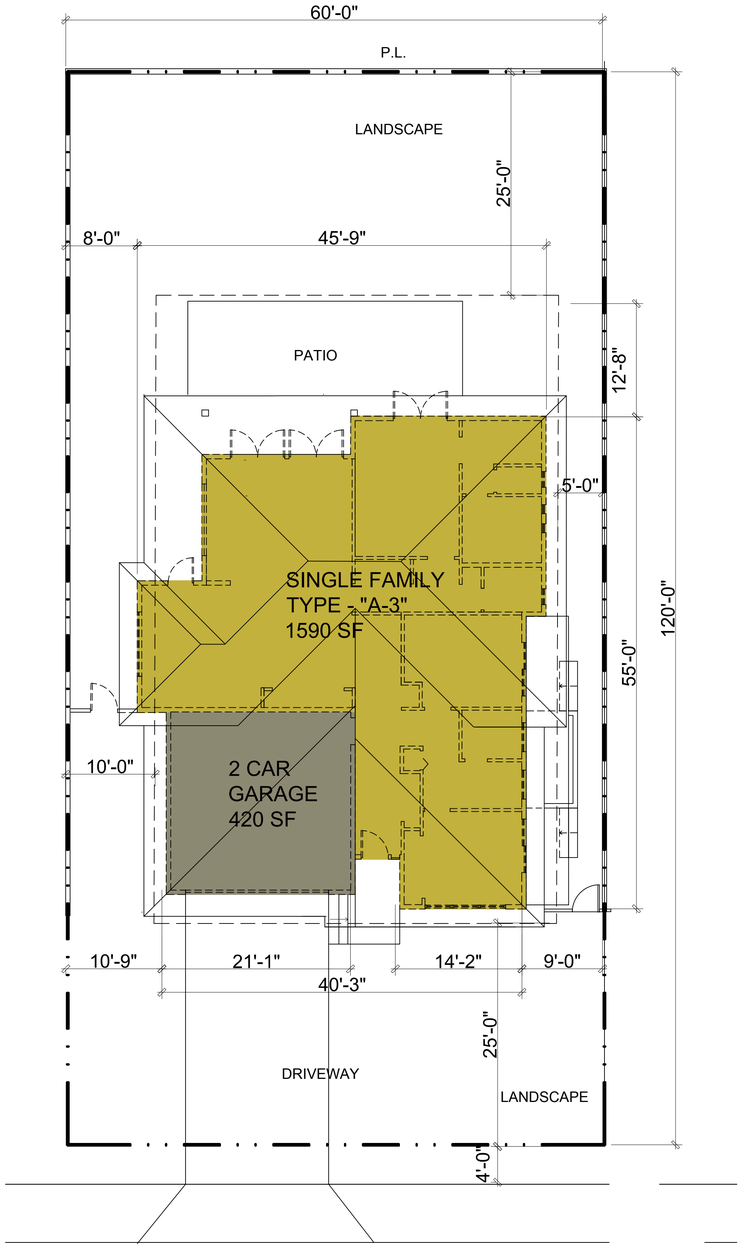
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

SF-2.2

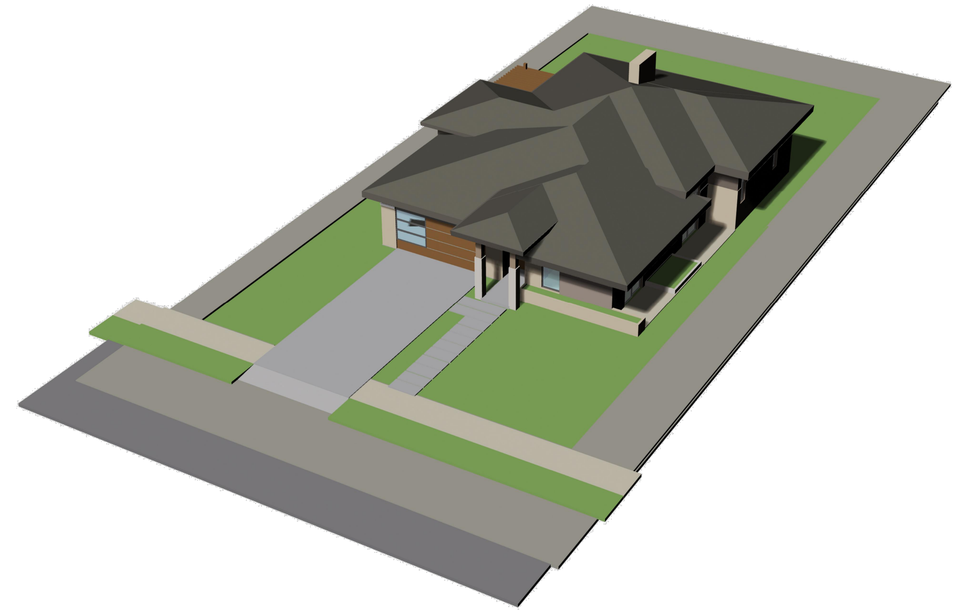
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



KARON ST.

SITE PLAN

1/8"=1'-0"



UNIT "B"- TOP STREET VIEW



UNIT "A-3"- STREET VIEW

LOT SIZE - 7,200sf
DIM. - 60'X 120'

PROPOSED:
BLDG. TYPE "A-3"

TYPE: - 3br & 3.5bath
SQ. FOOTAGE: - 1,590sf

PARKING: - 2 car garage
SQ.FOOTAGE: - 420sf

BUILT AREA: - 2,010sf

PATIOS: - 530sf

DRIVE WAY - 516sf

LOT COVERAGE:
including:
- residence - 1590sf
- 2 car garage - 420sf
- covered patio - 110sf

total covered area - 2,120sf (*29.4%*)

HEIGHT: - 18'- 3"

SINGLE FAMILY
TYPE - "A-3"
3 BR & 2.5 BATHS

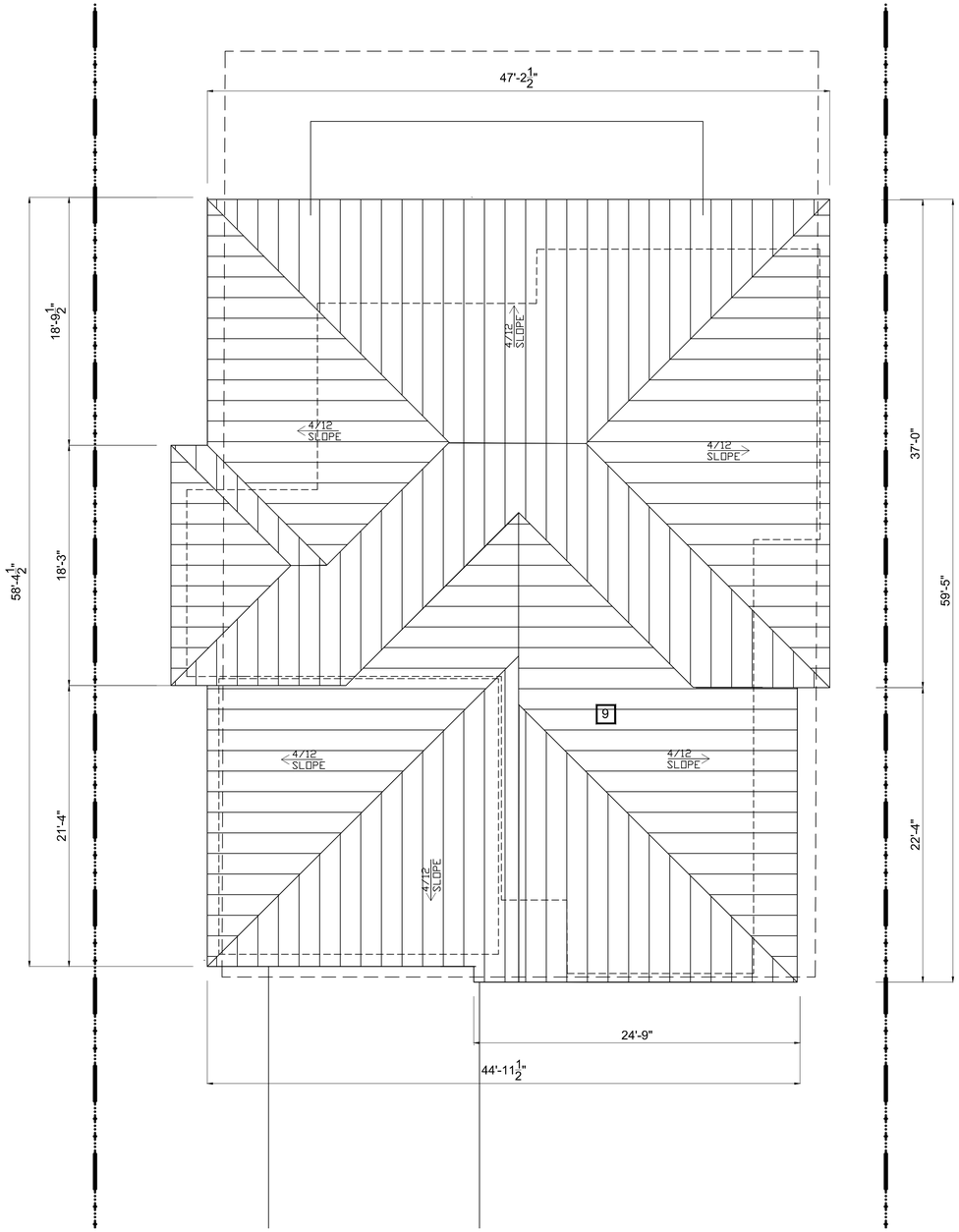
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

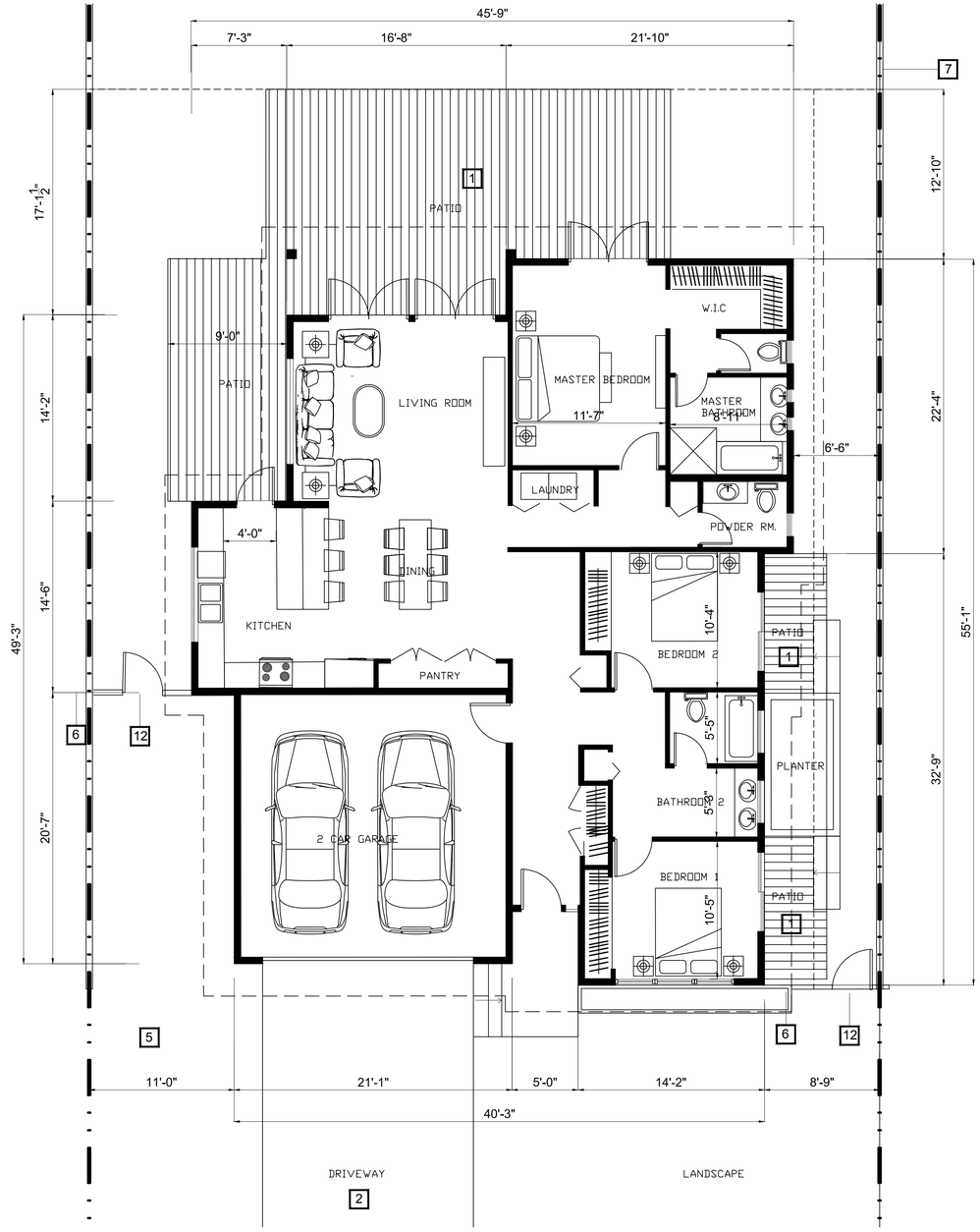
DATE: 06-06-2023
JOB NO.: 2021-046

SF-3.0



ROOF PLAN

3/16'=1'-0"



FLOOR PLAN

3/16'=1'-0"

MATERIAL LEGEND

1. COMPOSITE WOOD DECK - BY "TREX"
2. CONCRETE INTERLOCKING PAVERS
3. STAMPED CONCRETE
4. PRECAST CONCRETE PAVERS
5. GRASS CRETE
6. CMU SPLIT FACE WALL
7. VINYL FENCE
8. FLAT CONCRETE ROOF TILE - DARK "BELL AIR" BY EAGLE (ICC-ESR-1900)
9. ASPHALT SHINGLES BY "IKO"
10. WOOD TRELLIS TREATED MAHOGANY- CLEAR
11. WOOD RAILING
12. METAL DOOR - PAINTED
13. WOOD PLANKS SCREEN WALL

LEGEND

- WALL
- STRUCTURE ABOVE
- PROPERTY LINE
- SETBACK LINE

SINGLE FAMILY
TYPE - "A-3"
3 BR & 2.5 BATHS

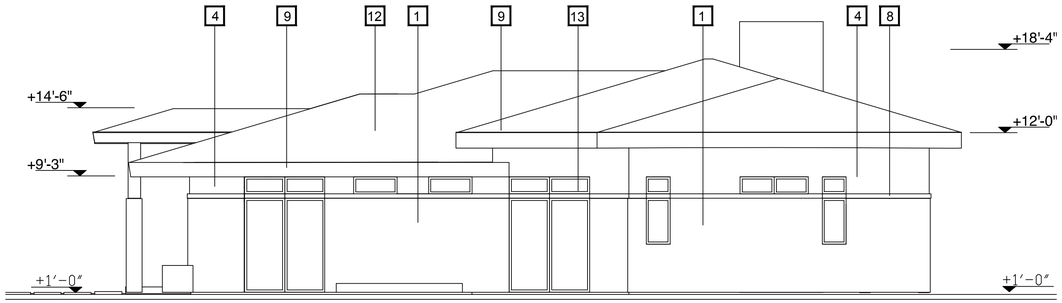
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

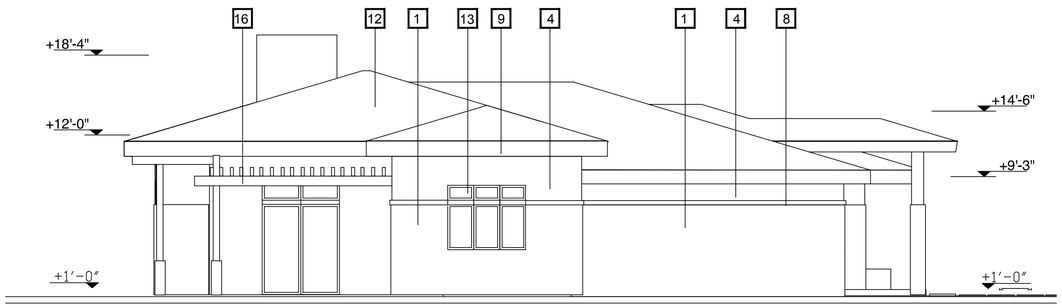
SF-3.1

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



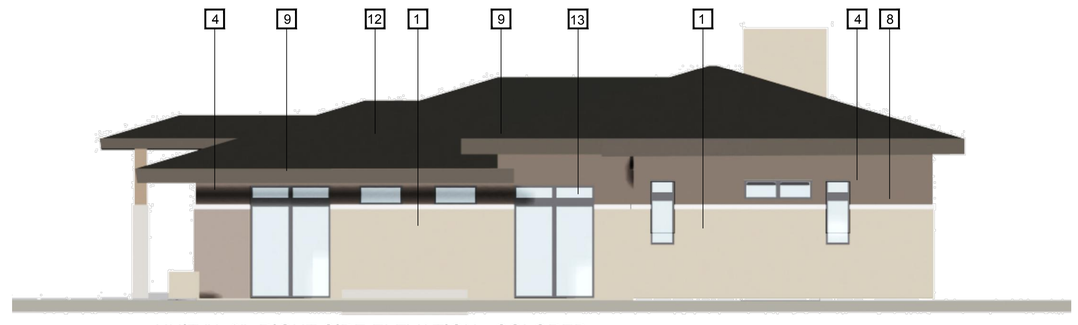
UNIT "A-3"- RIGHT SIDE ELEVATION

3/16'=1'-0"



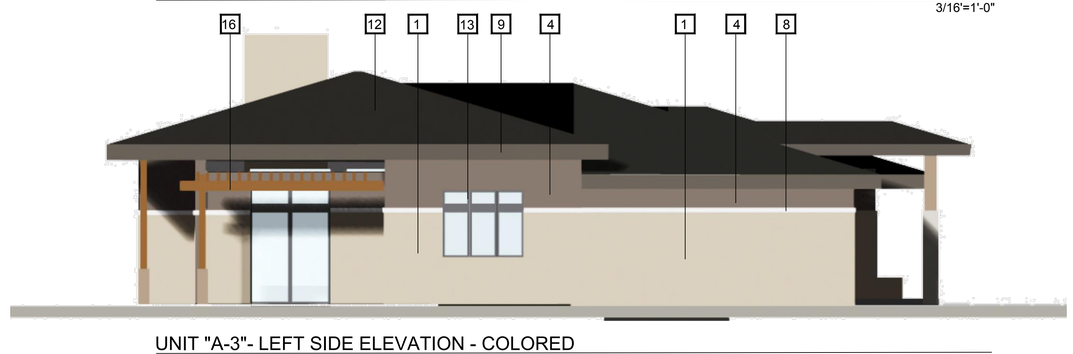
UNIT "A-3"- LEFT SIDE ELEVATION

3/16'=1'-0"



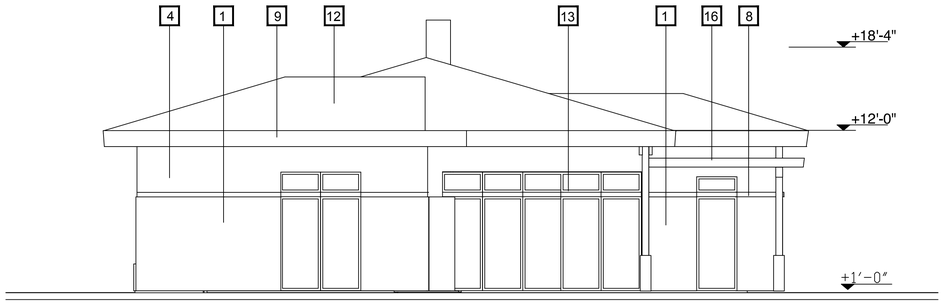
UNIT "A-3"- RIGHT SIDE ELEVATION - COLORED

3/16'=1'-0"



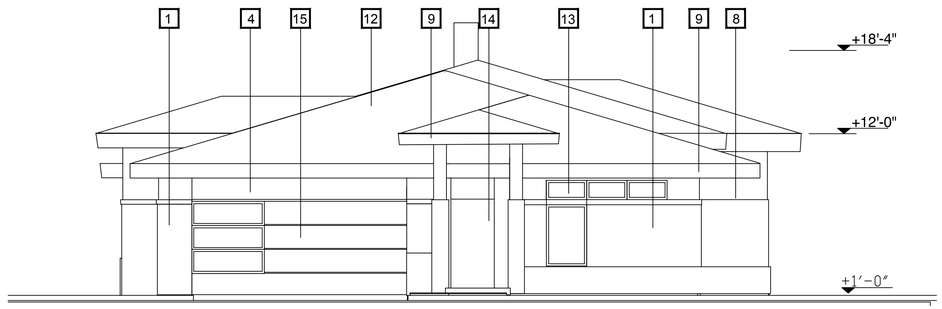
UNIT "A-3"- LEFT SIDE ELEVATION - COLORED

3/16'=1'-0"



UNIT "A-3"- BACK ELEVATION

3/16'=1'-0"



UNIT "A-3"- STREET ELEVATION

3/16'=1'-0"



UNIT "A-3"- BACK ELEVATION - COLORED

3/16'=1'-0"



UNIT "A-3"- STREET ELEVATION - COLORED

3/16'=1'-0"

MATERIAL LEGEND

1. EXTERIOR CEMENT PLASTER 1 - SAND FINISH COLOR BY LA HABRA "FALLBROOK"
2. EXTERIOR CEMENT PLASTER 2 - SAND FINISH BY LA HABRA "CORAL GABLES"
3. EXTERIOR CEMENT PLASTER 2 - SAND FINISH BY LA HABRA - "SILVERADO"
4. ARTIFICIAL WOOD SIDING BY "NEWTECKWOOD"
5. "HARDY" PLANKS
6. STONE VENEER - "ALASKA SUNSET"
7. BRICK VENEER
8. TRIM
9. WOOD FACIA - PAINTED
10. METAL CLADDING PAINTED - BY BENJAMIN MOOR"WORTH IRON" BLACK
11. FLAT CONCRETE ROOF TILE - DARK "BELL AIR" BY EAGLE (ICC-ESR-1900)
12. ASPHALT SHINGLES BY "IKO"
13. WINDOWS - PER WINDOW SCHEDULE BY ANDERSEN(OR EQ.)COLONIAL STYLE - "COCOA BEAN"
14. SOLID WOOD DOOR TREATED OR PAINTED
15. WOOD - GARAGE DOOR
16. WOOD TRELLIS TREATED MAHOGANY- CLEAR
17. WOOD COLUMN TREATED OR PAINTED

KEY NOTES



SINGLE FAMILY
TYPE - "A-3"
3 BR & 2.5 BATHS

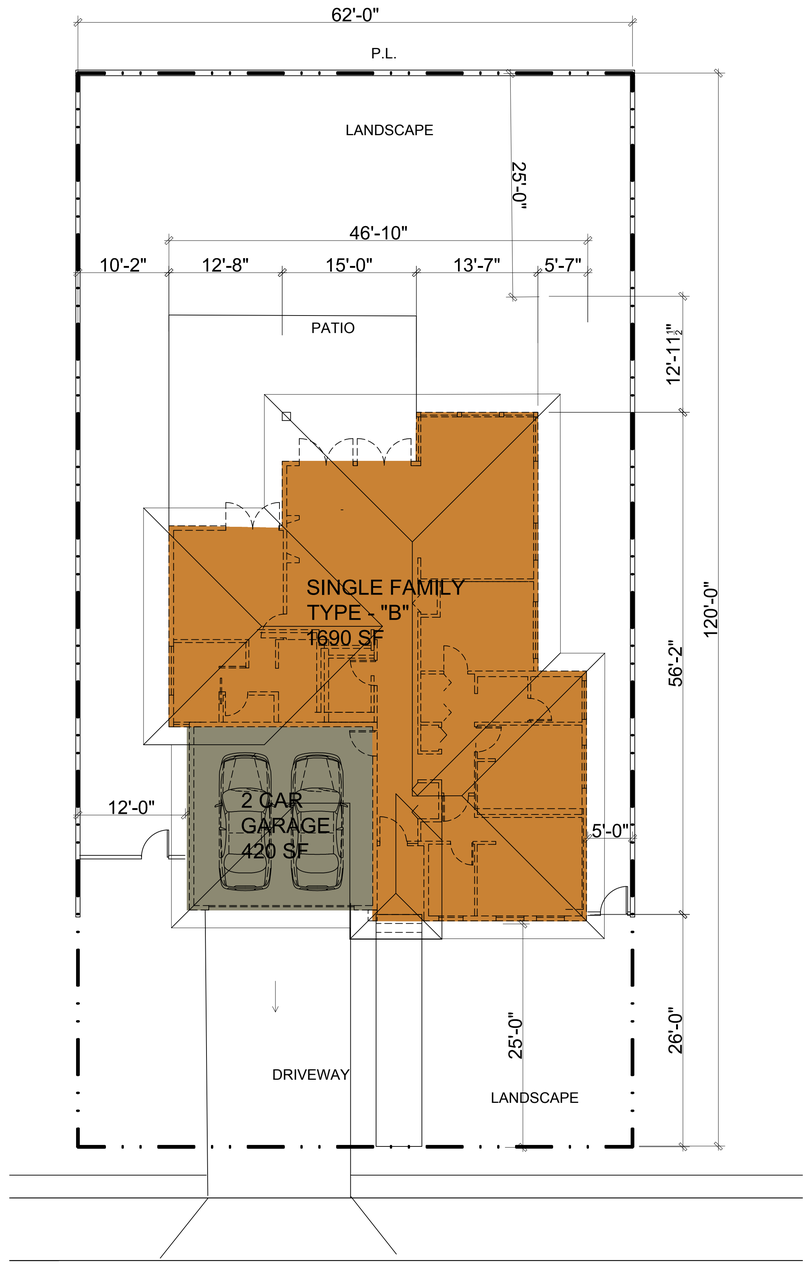
THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

SF-3.2

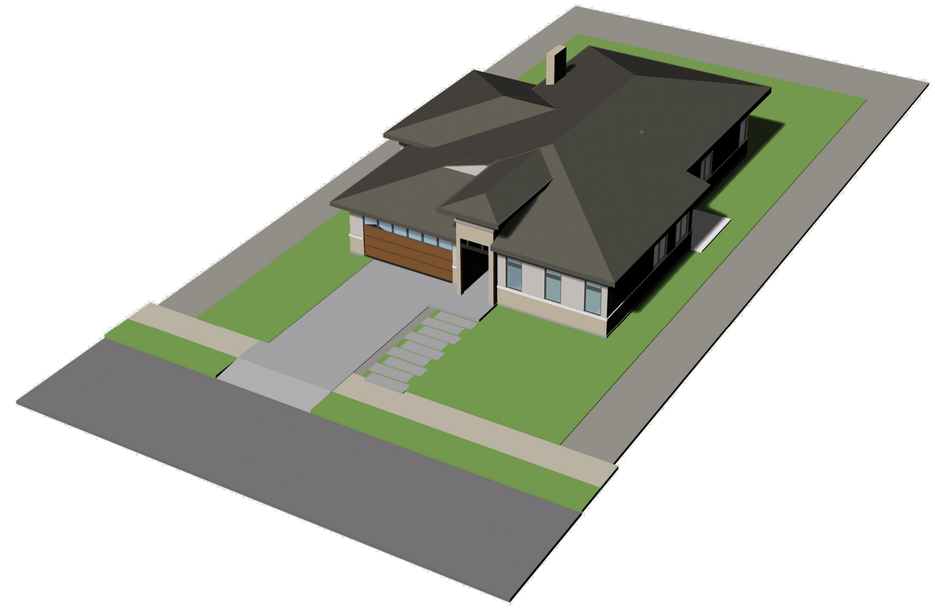
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



KARON ST.

SITE PLAN

1/8'=1'-0"



UNIT "B"- TOP STREET VIEW



UNIT "B"- STREET VIEW

LOT SIZE - 7,440sf
DIM. - 62'X 120'

PROPOSED:
BLDG. TYPE "B"

TYPE: - 4br & 3.5bath
SQ. FOOTAGE: - 1,690sf

PARKING: - 2 car garage
SQ.FOOTAGE: - 420sf

BUILT AREA: - 2110sf

PATIOS: - 540sf

DRIVE WAY - 516sf

LOT COVERAGE:
including:
- residence - 1690sf
- 2 car garage - 420sf
- covered patio - 110sf

total covered area - 2,230sf (*29.9%*)

HEIGHT: - 17'- 6"

SINGLE FAMILY
TYPE - "B"
4 BR & 3.5 BATHS

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

SF-4.0

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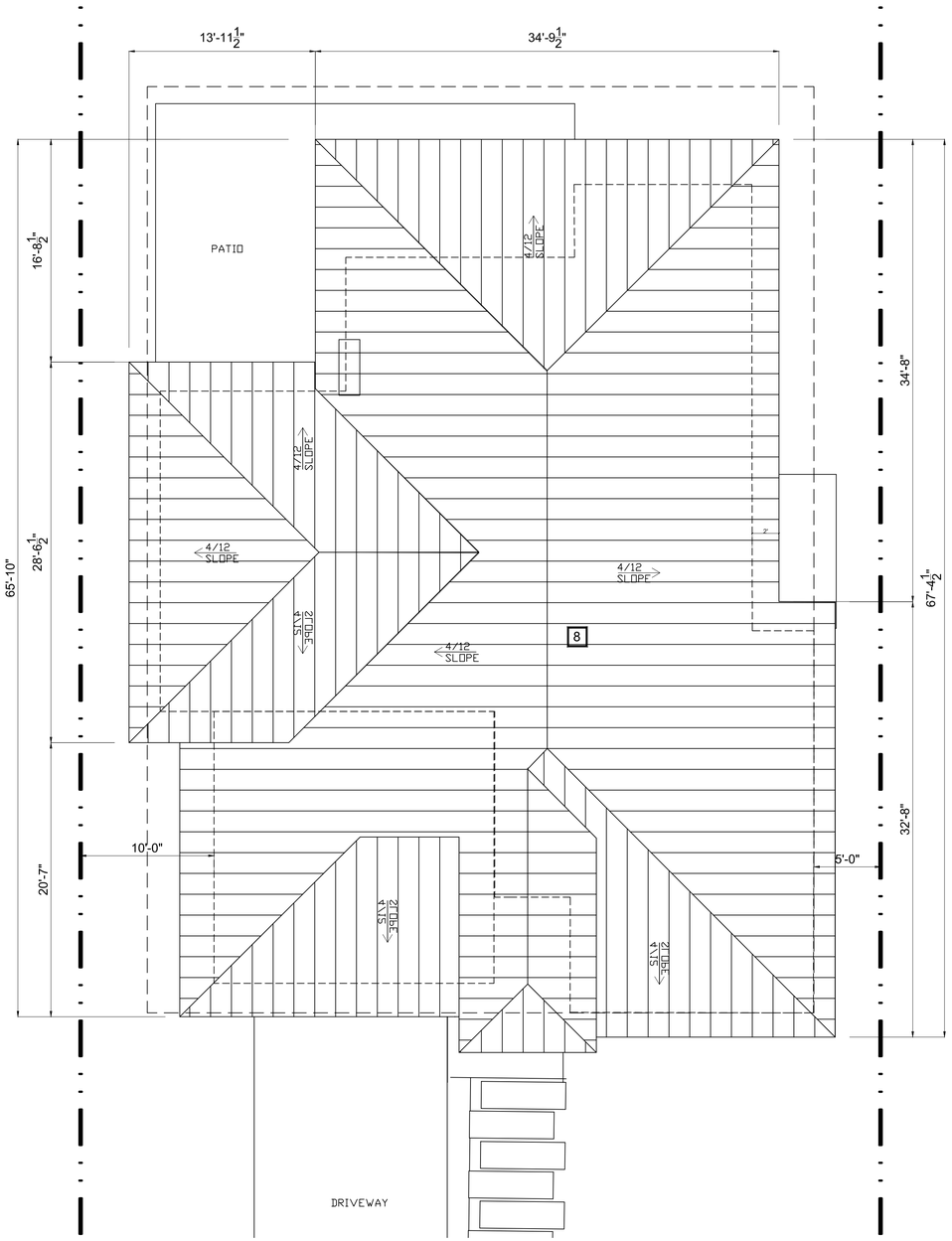
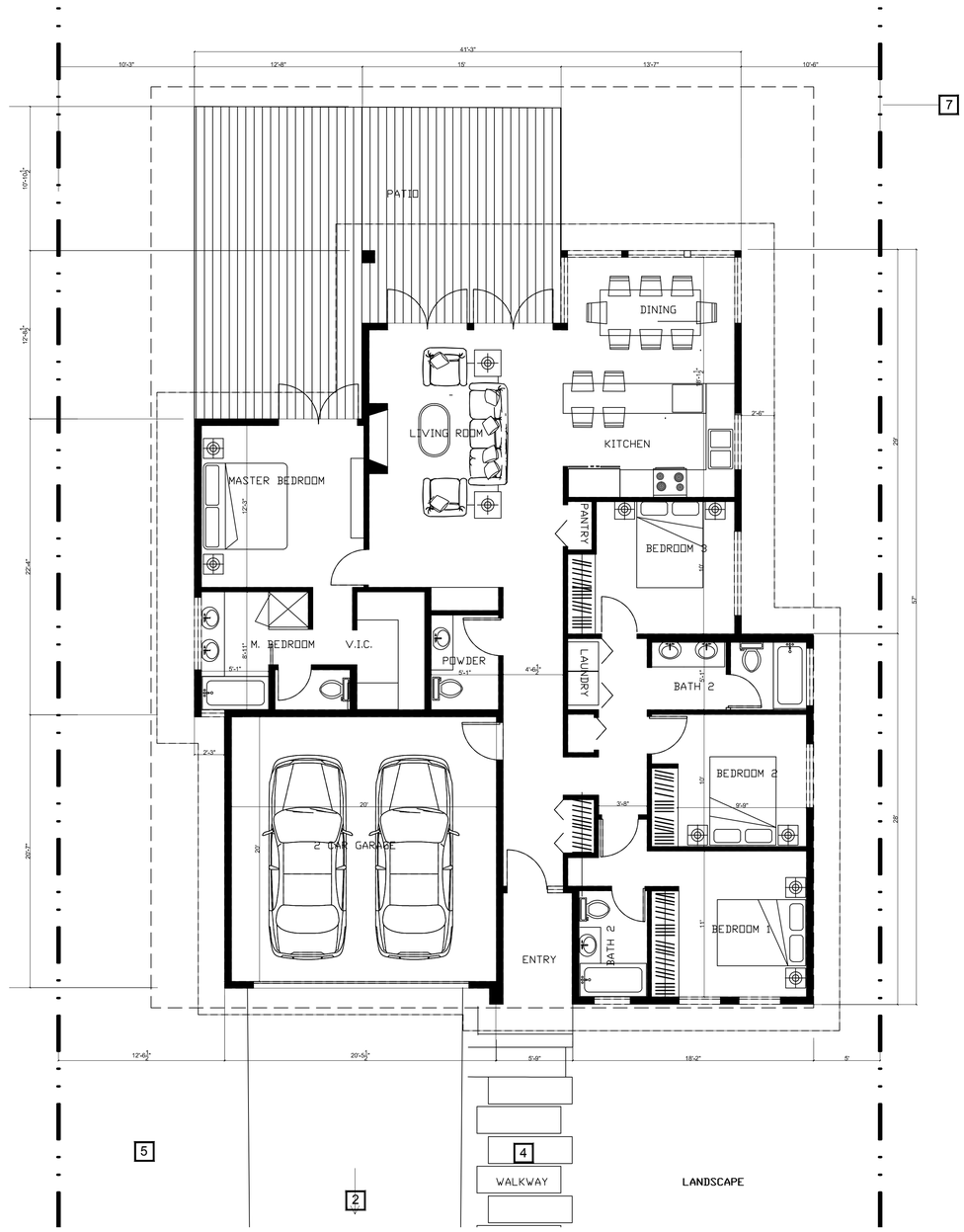
(626) 360-2888



ROOF PLAN

3/16'=1'-0"



FLOOR PLAN

3/16'=1'-0"

MATERIAL LEGEND

1. COMPOSITE WOOD DECK - BY "TREX"
2. CONCRETE INTERLOCKING PAVERS
3. STAMPED CONCRETE
4. PRECAST CONCRETE PAVERS
5. GRASS CRETE
6. CMU SPLIT FACE WALL
7. VINYL FENCE
8. FLAT CONCRETE ROOF TILE - DARK "BELL AIR" BY EAGLE (ICC-ESR-1900)
9. ASPHALT SHINGLES BY "IKO"
10. WOOD TRELLIS TREATED MAHOGANY- CLEAR
11. WOOD RAILING
12. METAL DOOR - PAINTED

LEGEND

- WALL
- STRUCTURE ABOVE
- PROPERTY LINE
- SETBACK LINE

SINGLE FAMILY
TYPE - "B"
4 BR & 3.5 BATHS

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

SF-4.1

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



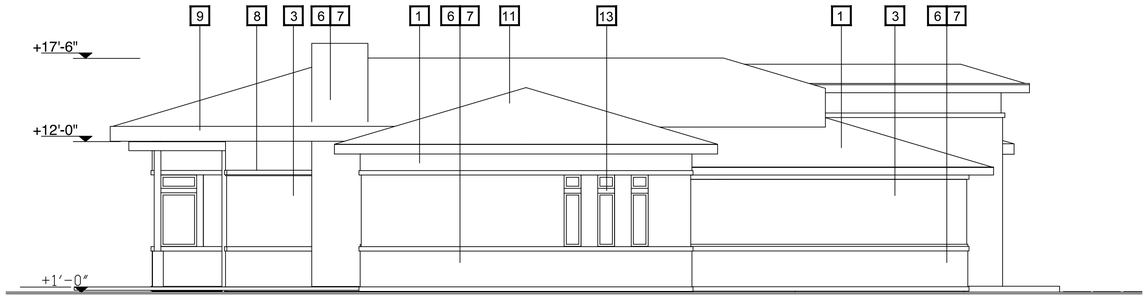
UNIT "B"- RIGHT SIDE ELEVATION

3/16'=1'-0"



UNIT "B"- BACK ELEVATION

3/16'=1'-0"



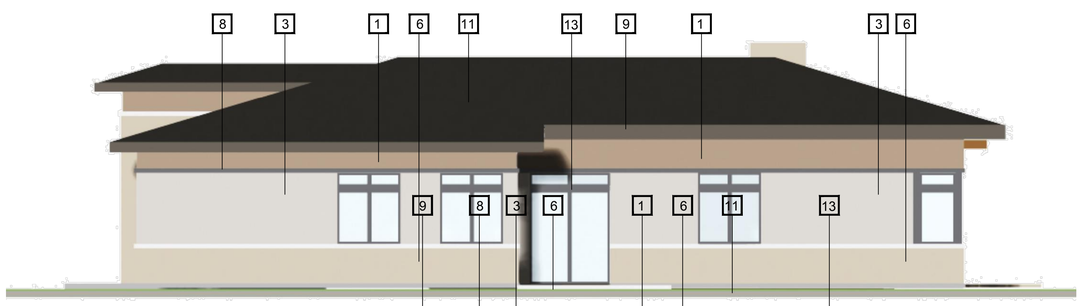
UNIT "B"- LEFT SIDE ELEVATION

3/16'=1'-0"



UNIT "B"- STREET ELEVATION

3/16'=1'-0"



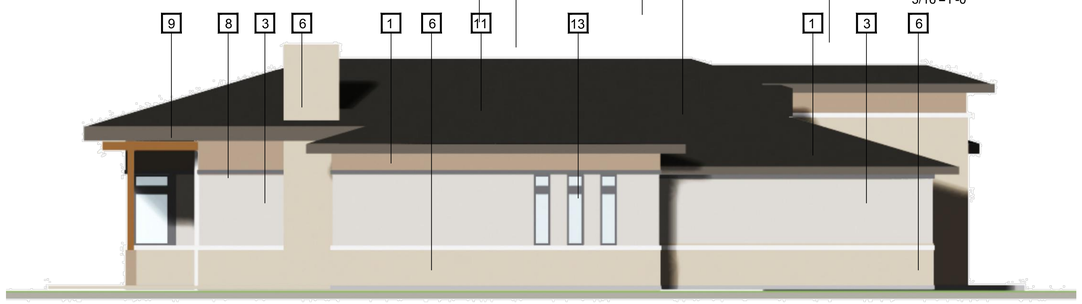
UNIT "B"- RIGHT SIDE ELEVATION - COLORED

3/16'=1'-0"



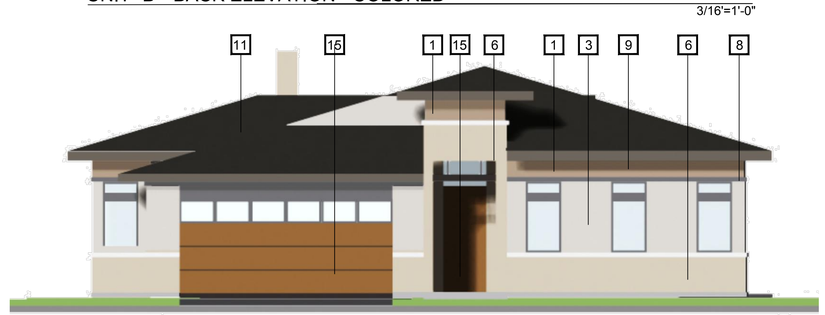
UNIT "B"- BACK ELEVATION - COLORED

3/16'=1'-0"



UNIT "B"- LEFT SIDE ELEVATION - COLORED

3/16'=1'-0"



UNIT "B"- STREET ELEVATION - COLORED

3/16'=1'-0"

MATERIAL LEGEND

1. EXTERIOR CEMENT PLASTER 1 - SAND FINISH COLOR BY LA HABRA "FALLBROOK"
2. EXTERIOR CEMENT PLASTER 2 - SAND FINISH BY LA HABRA "CORAL GABLES"
3.
4. ARTIFICIAL WOOD SIDING BY "NEWTECKWOOD"
5. "HARDY" PLANKS
6. STONE VENEER - "ALASKA SUNSET"
7. BRICK VENEER
8. TRIM
9. WOOD FACIA - PAINTED
10. METAL CLADDING PAINTED - BY BENJAMIN MOOR"WORTH IRON" BLACK
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13. WINDOWS - PER WINDOW SCHEDULE BY ANDERSEN(OR EQ.)COLONIAL STYLE - "COCOA BEAN"
14. SOLID WOOD DOOR TREATED OR PAINTED
15. WOOD - GARAGE DOOR
16. WOOD TRELLIS TREATED MAHOGANY- CLEAR
17. WOOD COLUMN TREATED OR PAINTED

KEY NOTES



"CORAL GABLES"

"SILVERADO"



"FALLBROOK"



"WORTH IRON BLACK"



WOOD SIDING



"HARDY" PLANKS



"BRICK VENEER"



"ALASKA SUNSET"



FLAT CONCRETE TILE



ASPHALT SHINGLES

SINGLE FAMILY
TYPE - "B"
4 BR & 3.5 BATHS

THE NEIGHBORHOODS AT LUGONIA VILLAGE

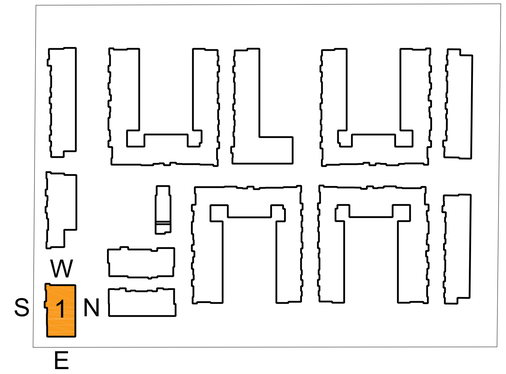
REDLANDS, CA

DATE: 06-06-2023
JOB NO.: 2021-046

SF-4.2

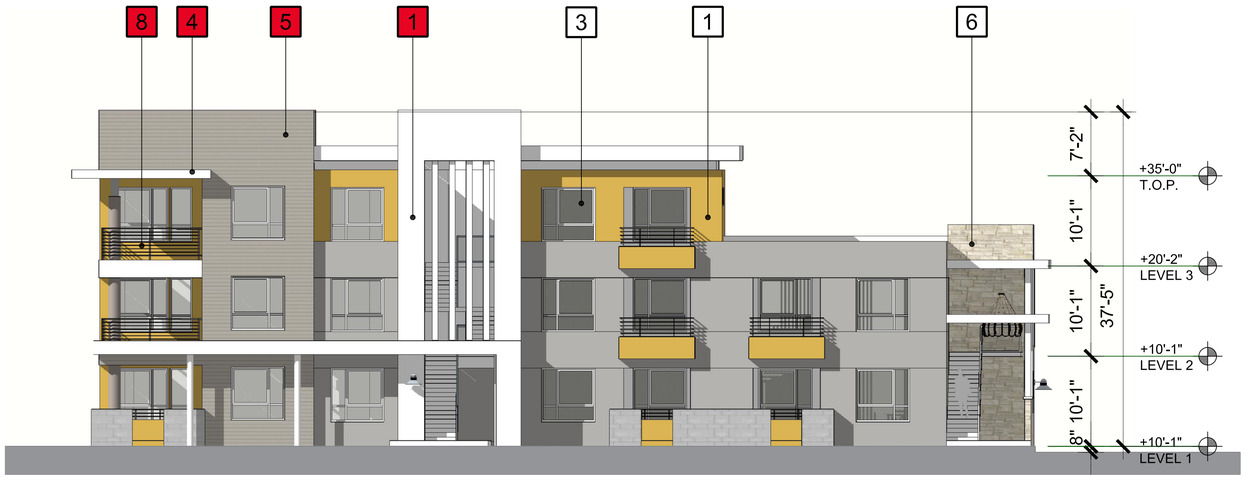
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.2 BUILDING COLOR MAP
FOR COLOR SCHEME

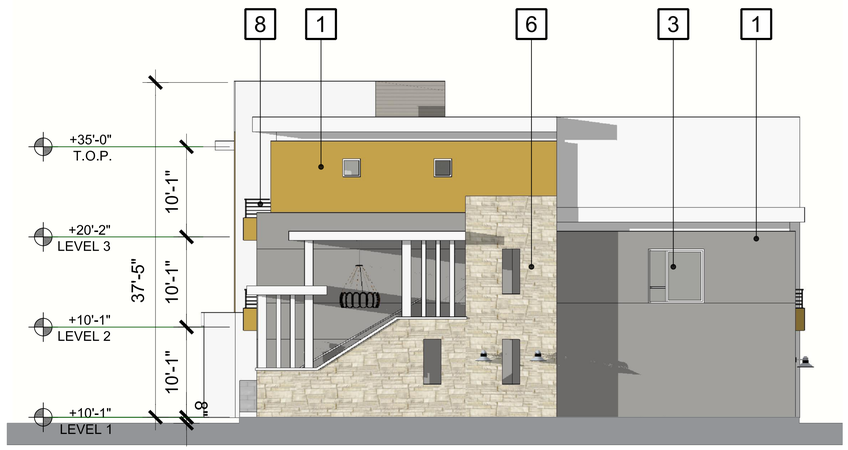


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



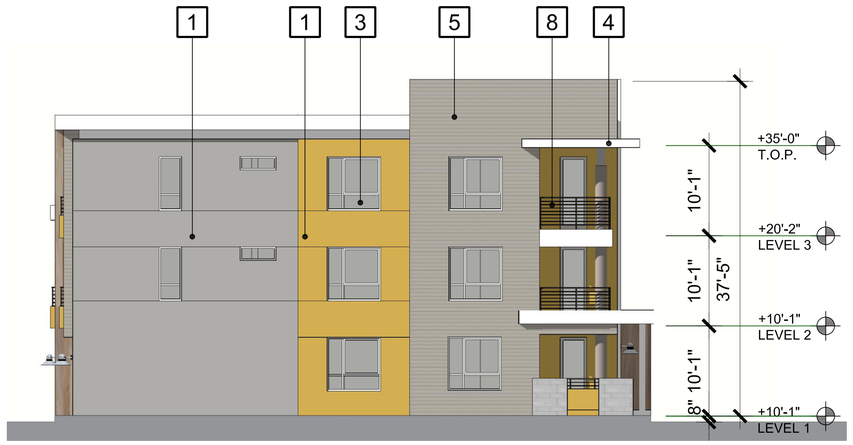
SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

THE NEIGHBORHOODS AT LUGONIA VILLAGE

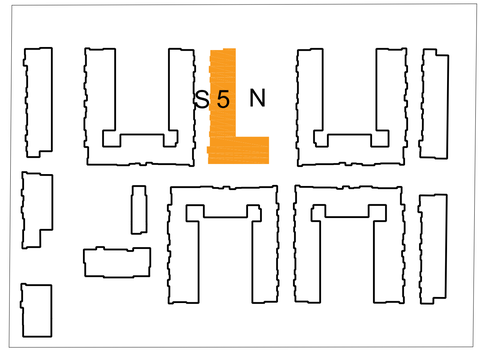
REDLANDS, CA

TYPE A - BLDG. 1 ELEVATIONS

M-2.1.2

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.4 BUILDING COLOR MAP
FOR COLOR SCHEME

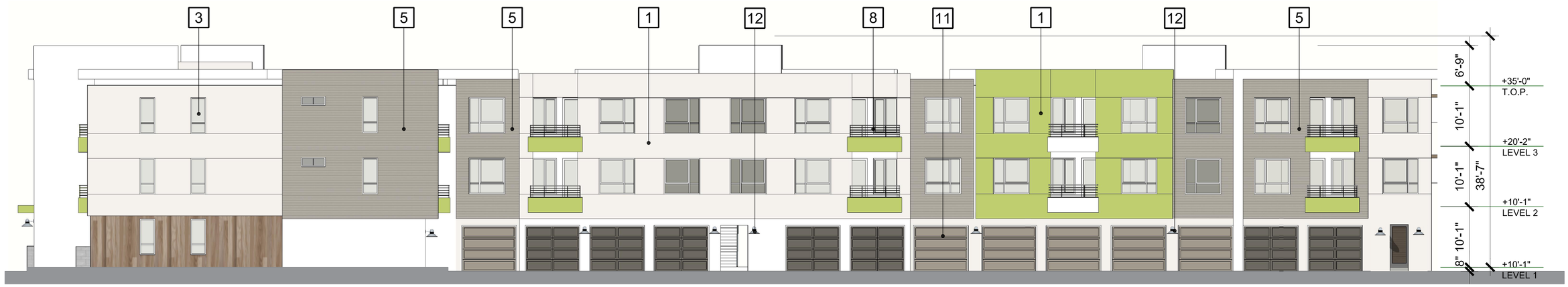


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



SOUTH ELEVATION



NORTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

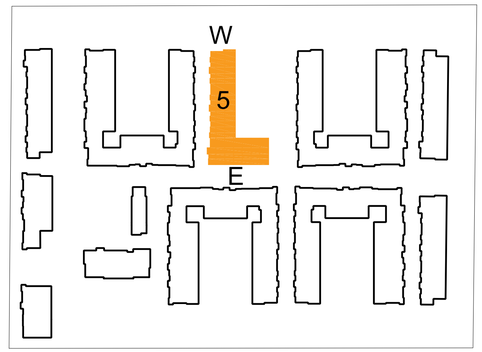
TYPE B - BLDG. 5 ELEVATIONS 1

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.2.2

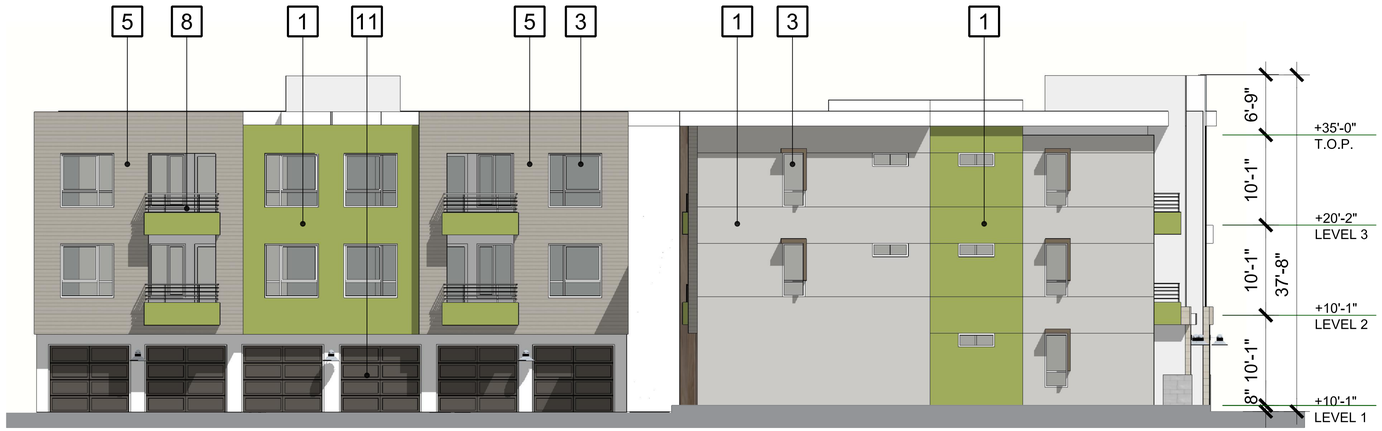
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.4 BUILDING COLOR MAP FOR COLOR SCHEME



EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



WEST ELEVATION



EAST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

TYPE B - BLDG. 5 ELEVATIONS 2

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.2.3

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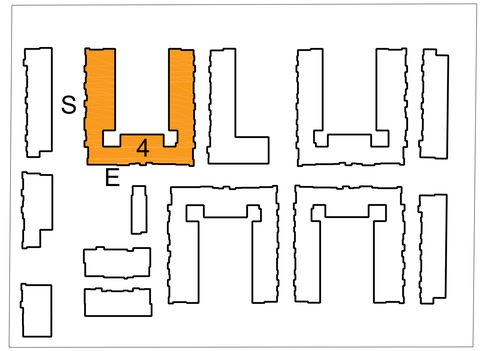
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.2 BUILDING COLOR MAP
FOR COLOR SCHEME



EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



EAST ELEVATION



SOUTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

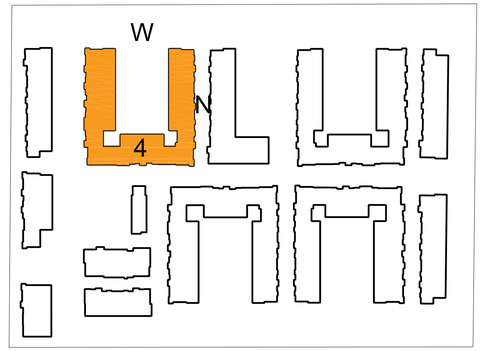
TYPE C.1 - BLDG. 4 ELEVATIONS - 1

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.3.3

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.2 BUILDING COLOR MAP
FOR COLOR SCHEME

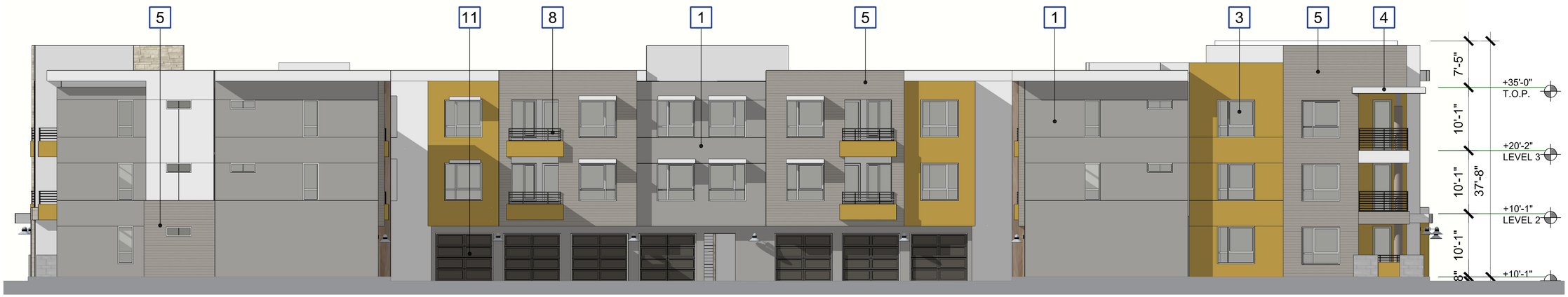


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



NORTH ELEVATION



COURTYARD WEST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

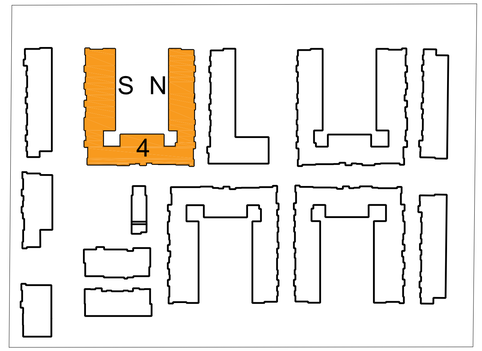
TYPE C.1 - BLDG. 4 ELEVATIONS - 2

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.3.4

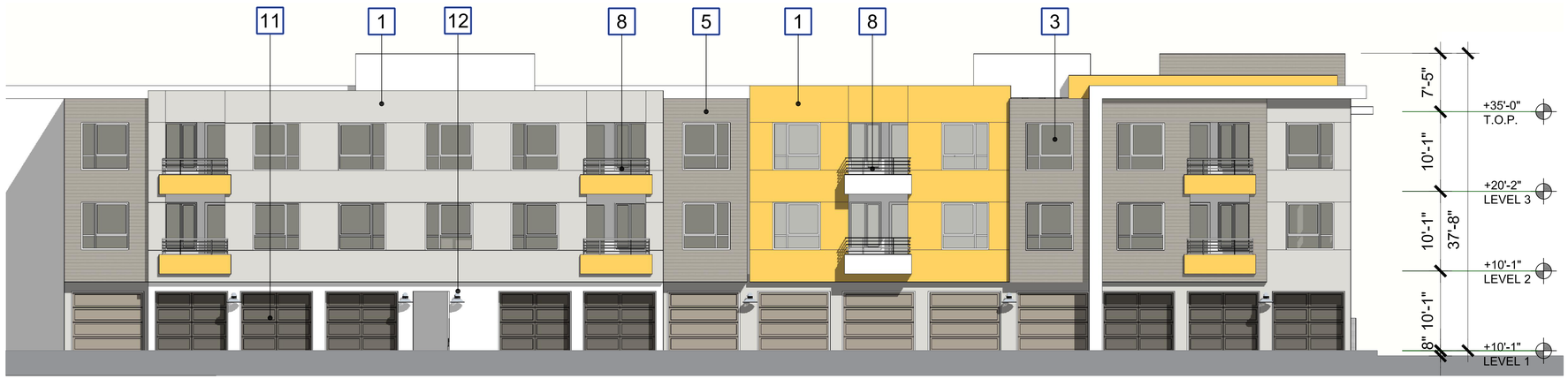
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.2 BUILDING COLOR MAP
FOR COLOR SCHEME

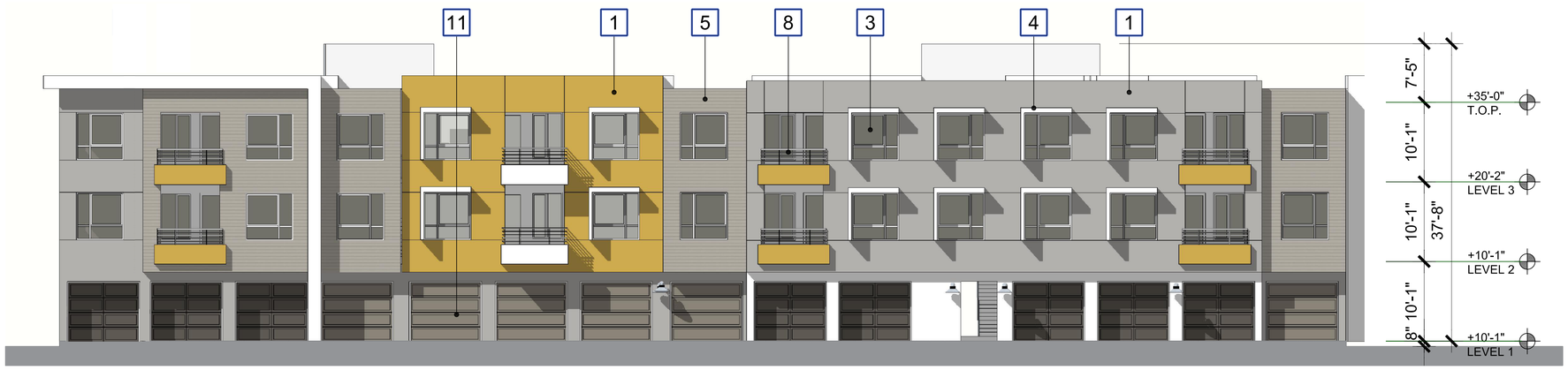


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



COURTYARD SOUTH ELEVATION



COURTYARD NORTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

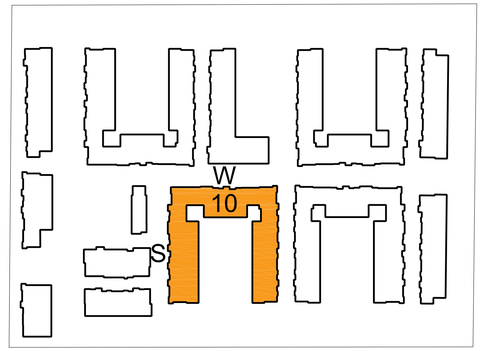
TYPE C.1 - BLDG. 4 ELEVATIONS - 3

DATE: 06-05-2023
JOB NO.: 2021-046

M-2.3.5

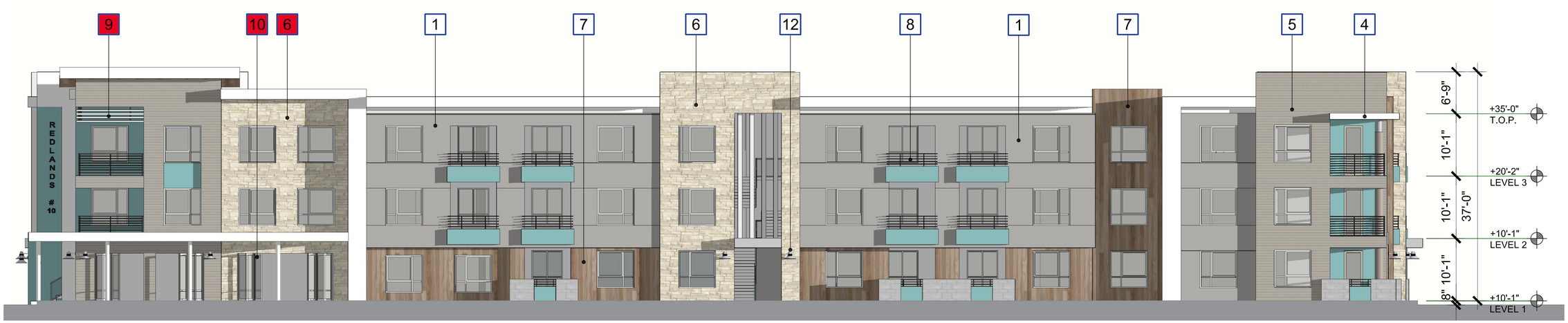
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.1 BUILDING COLOR MAP
FOR COLOR SCHEME

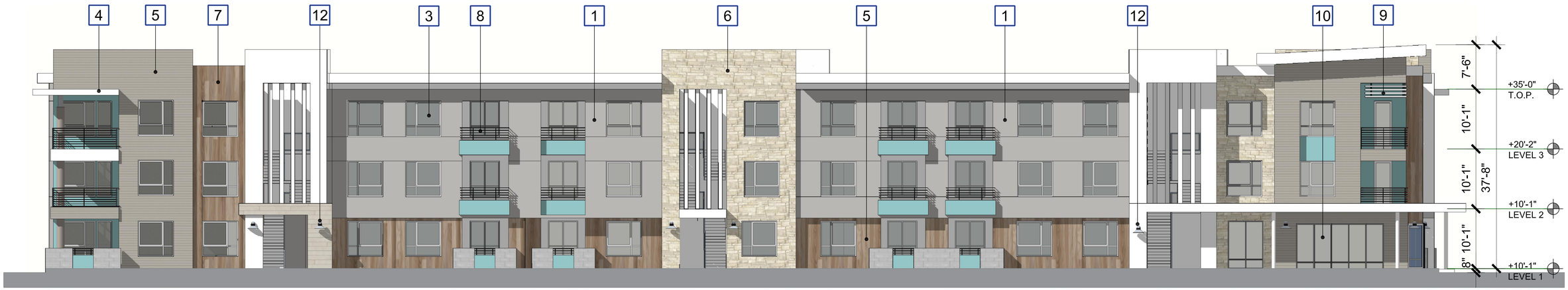


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



SOUTH ELEVATION



WEST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

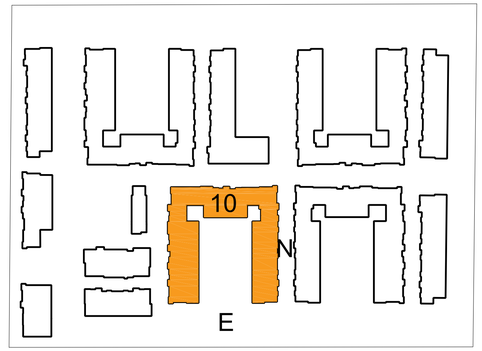
TYPE C.1 - BLDG. 10 ELEVATIONS - 1

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.3.6

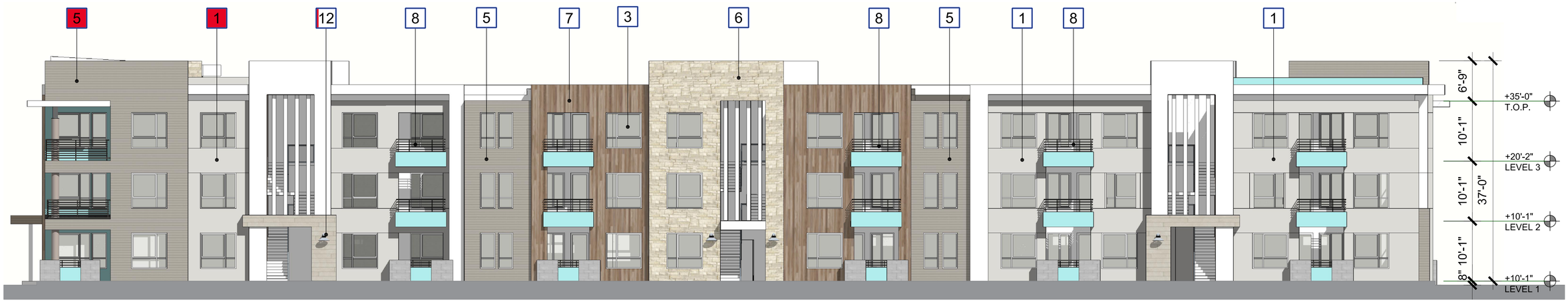
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.1 BUILDING COLOR MAP
FOR COLOR SCHEME

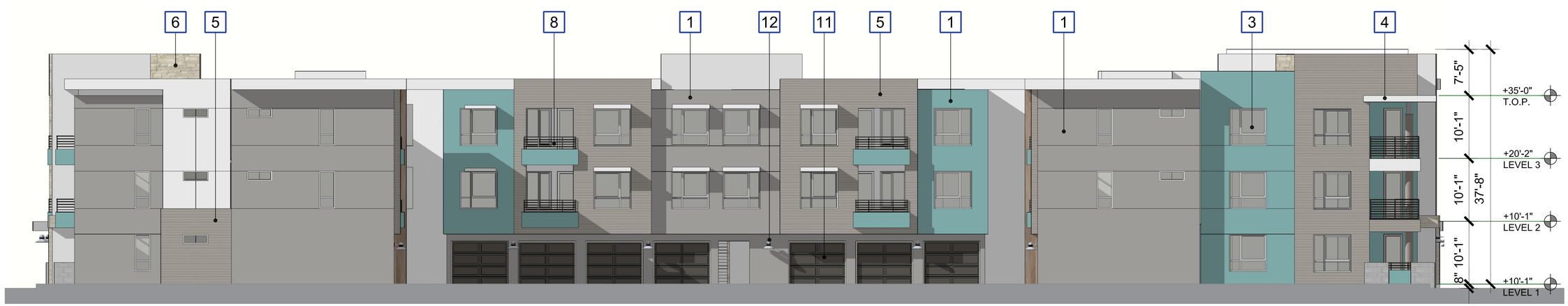


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



NORTH ELEVATION



EAST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

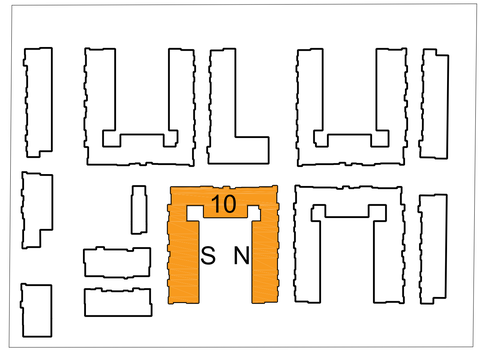
TYPE C.1 - BLDG. 10 ELEVATIONS - 2

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.3.7

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.1 BUILDING COLOR MAP
FOR COLOR SCHEME

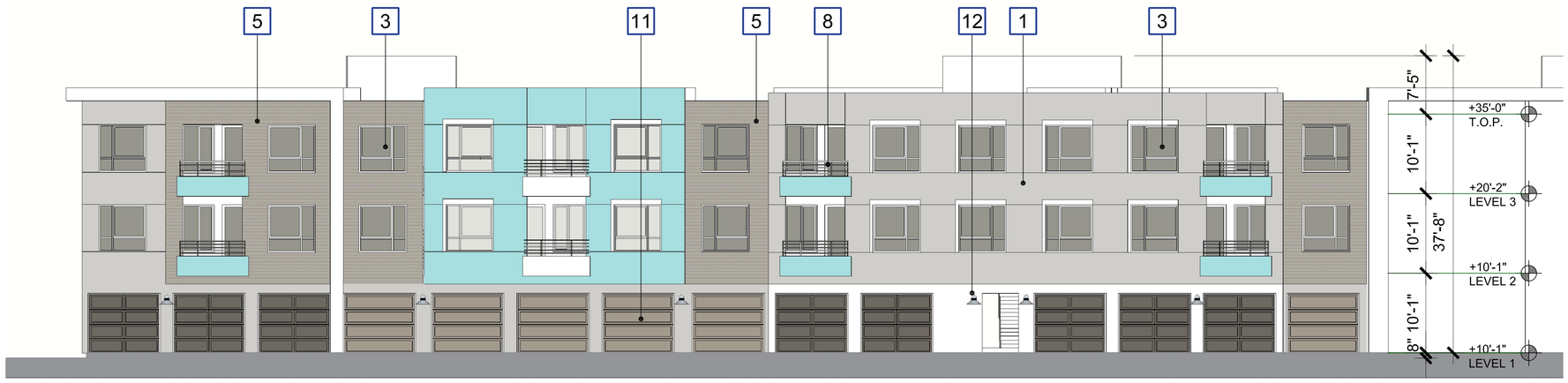


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



COURTYARD NORTH ELEVATION



COURTYARD SOUTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

TYPE C.1 - BLDG. 10 ELEVATIONS - 3

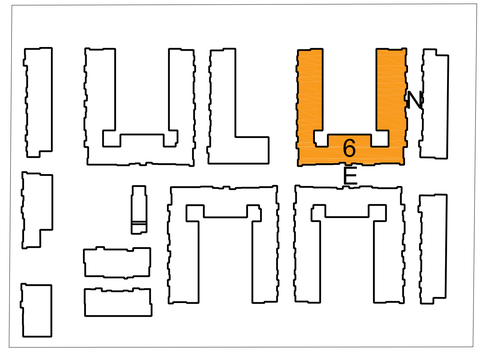
SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.3.8

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

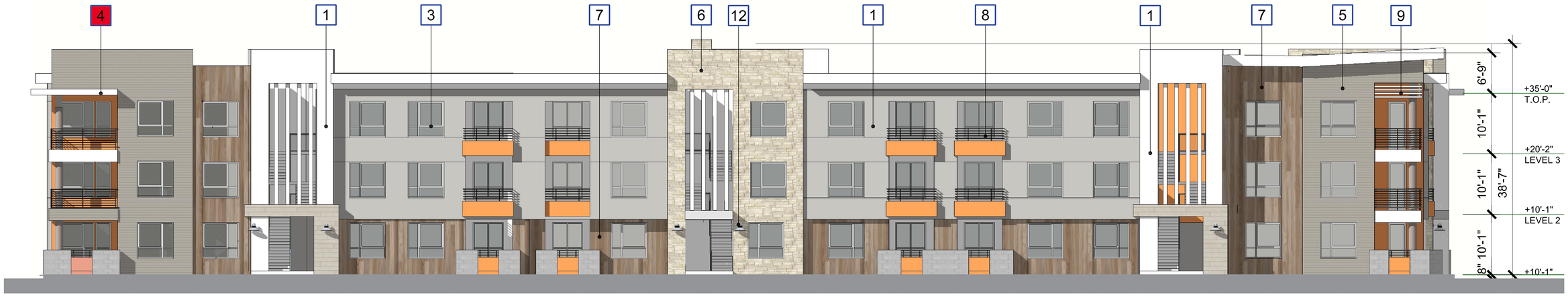
Redland:

NOTE:
SEE M6.5 BUILDING COLOR MAP
FOR COLOR SCHEME

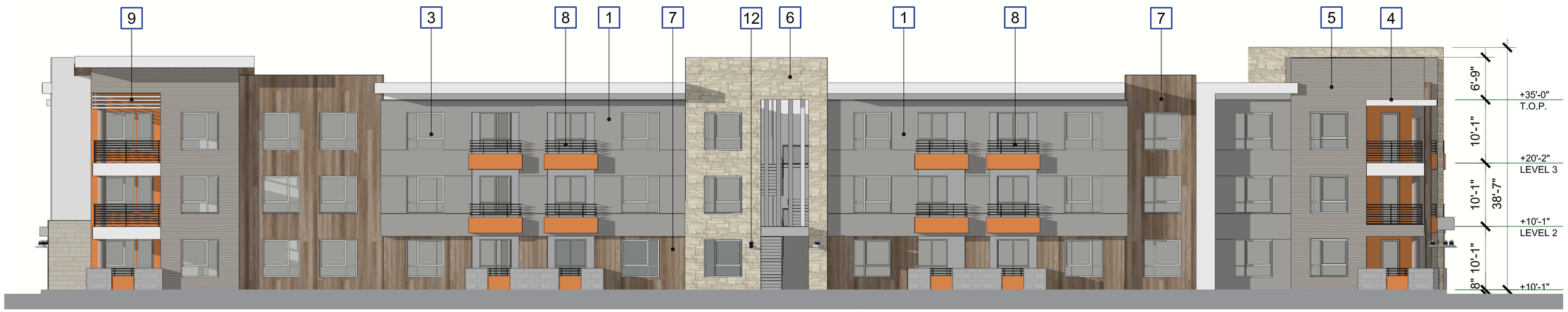


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



NORTH ELEVATION



EAST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

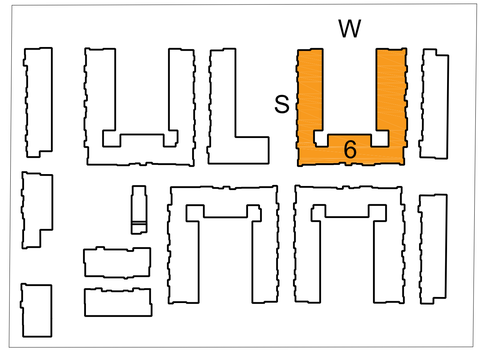
TYPE C.2 - BLDG. 6 ELEVATIONS - 1

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.4.3

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.5 BUILDING COLOR MAP
FOR COLOR SCHEME

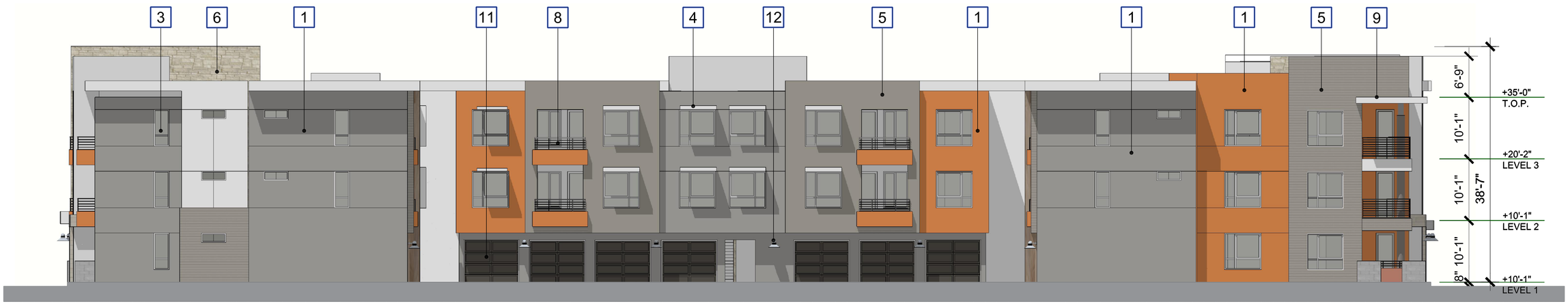


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



SOUTH ELEVATION



WEST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

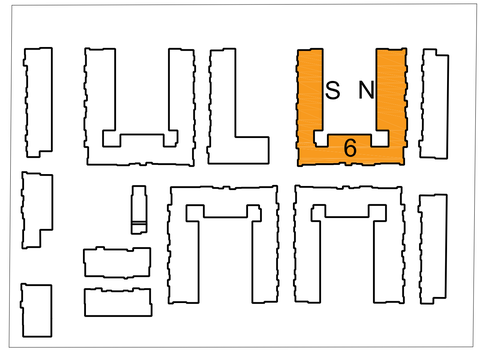
TYPE C.2 - BLDG. 6 ELEVATIONS - 2

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.4.4

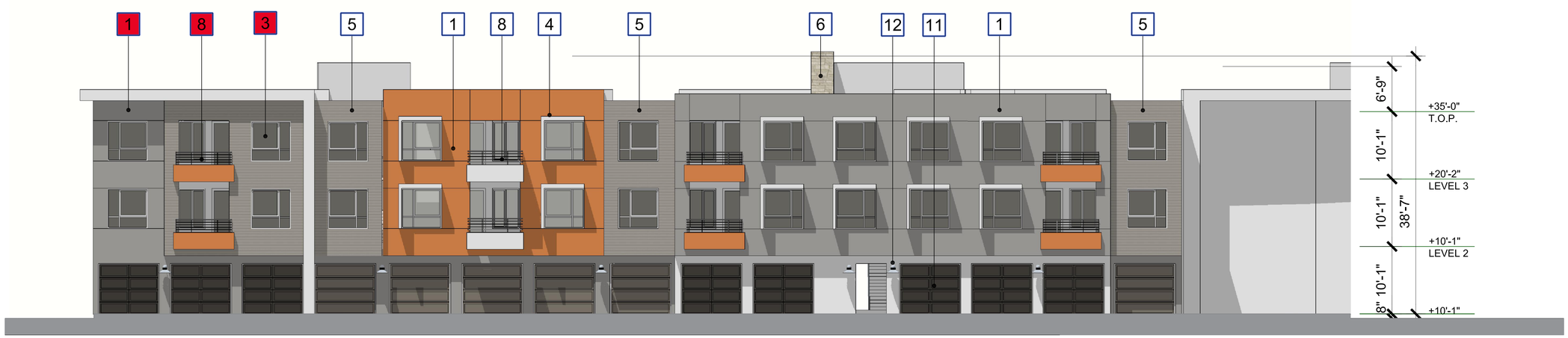
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.5 BUILDING COLOR MAP
FOR COLOR SCHEME

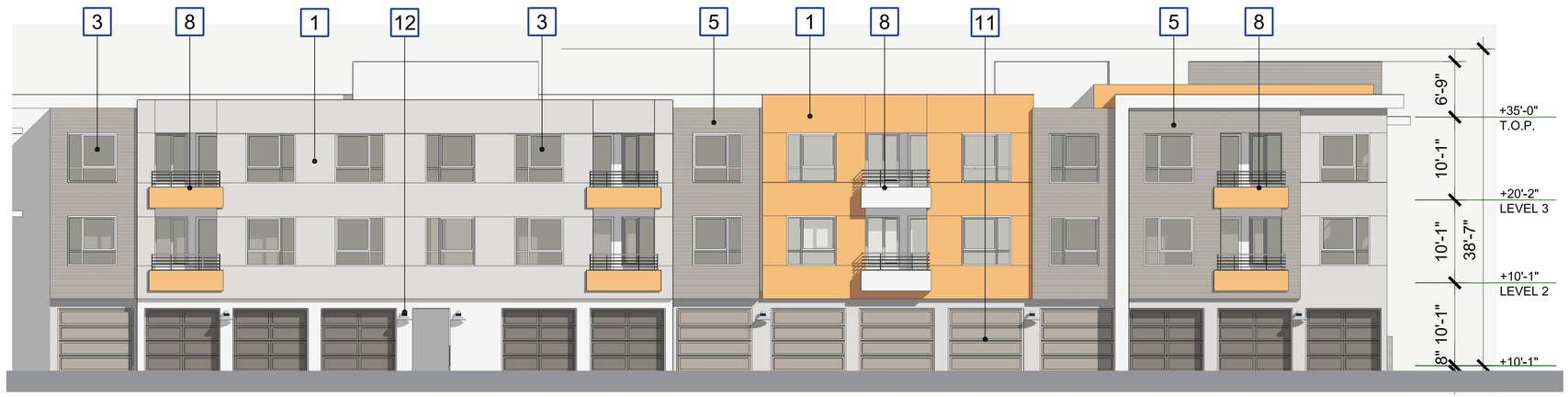


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



COURTYARD NORTH ELEVATION



COURTYARD SOUTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

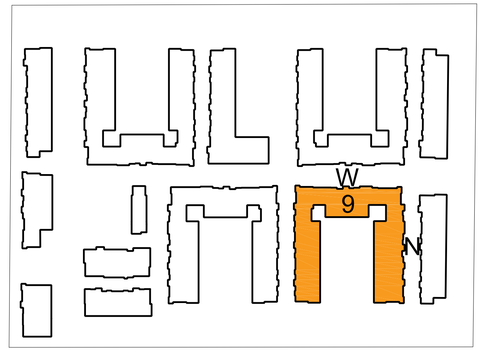
TYPE C.2 - BLDG. 6 ELEVATIONS - 3

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.4.5

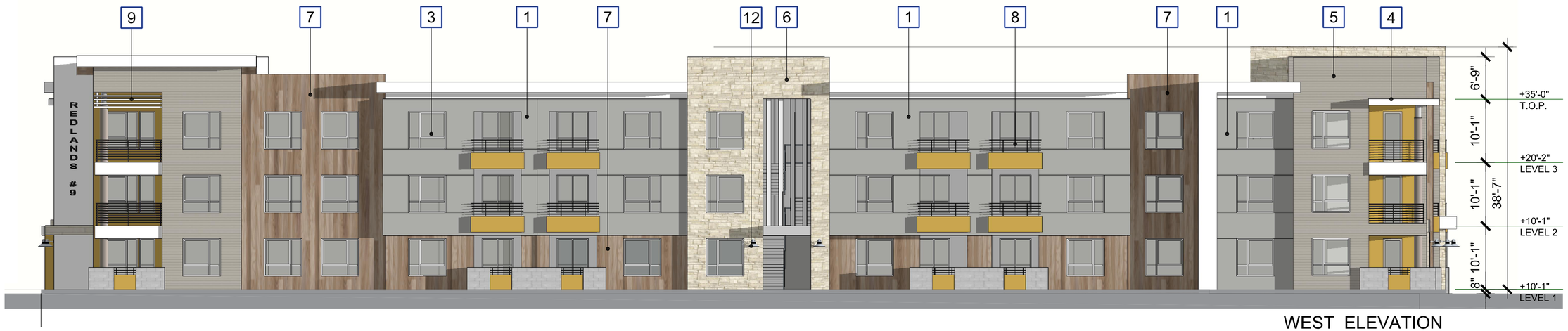
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.2 BUILDING COLOR MAP
FOR COLOR SCHEME



EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



WEST ELEVATION



NORTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

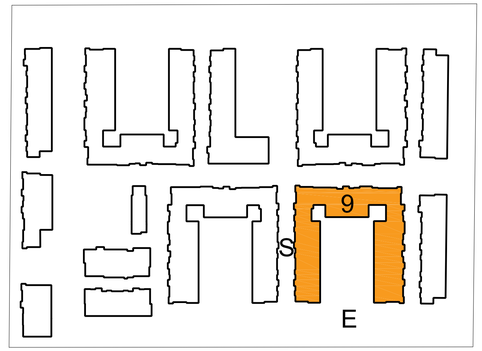
TYPE C.2 - BLDG. 9 ELEVATIONS - 1

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.4.6

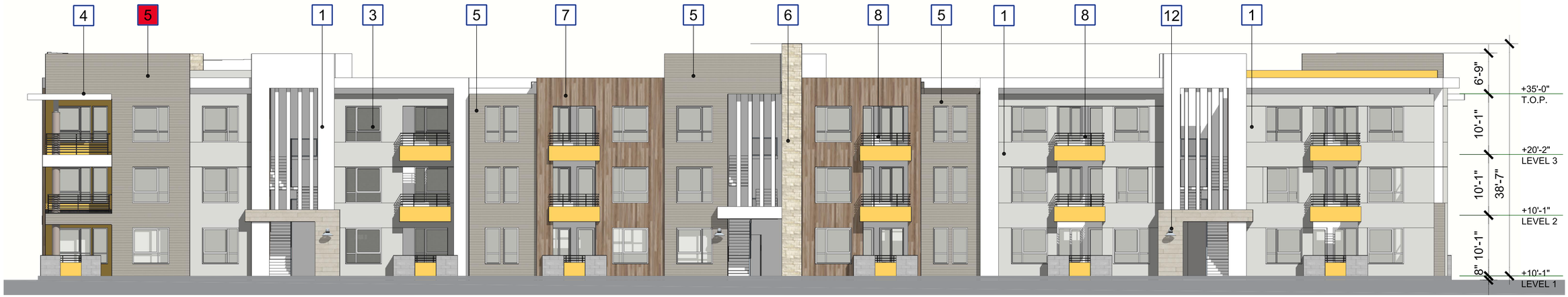
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.2 BUILDING COLOR MAP
FOR COLOR SCHEME

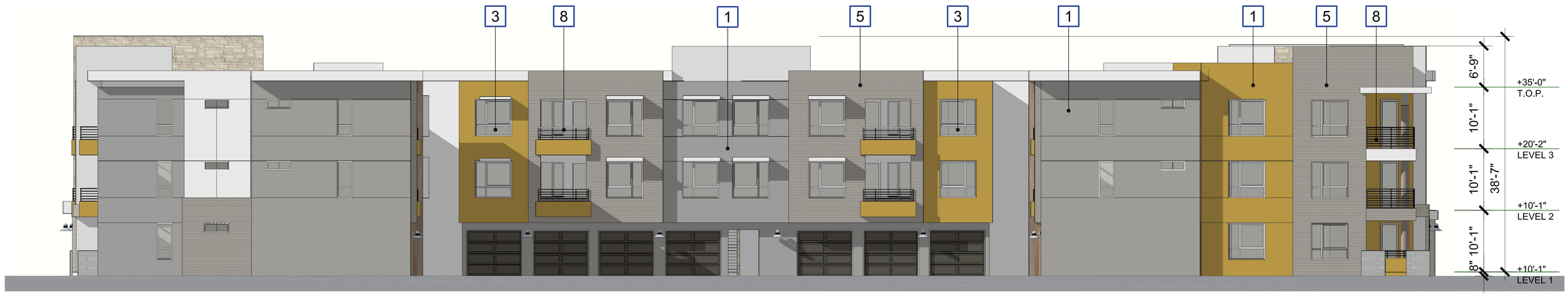


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



SOUTH ELEVATION



EAST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

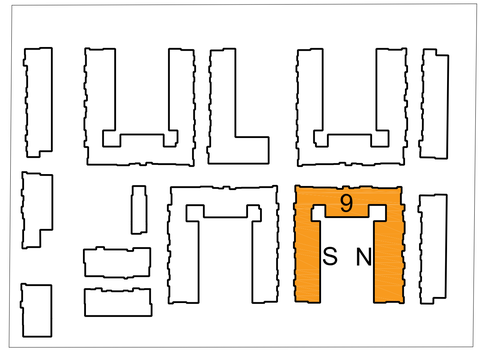
TYPE C.2 - BLDG. 9 ELEVATIONS - 2

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.4.7

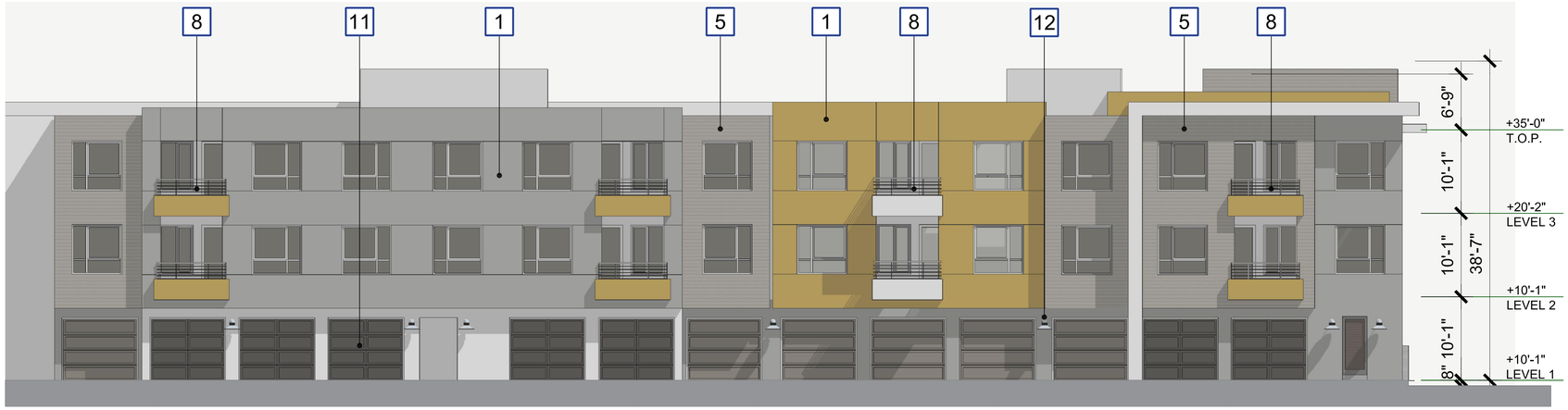
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.2 BUILDING COLOR MAP
FOR COLOR SCHEME

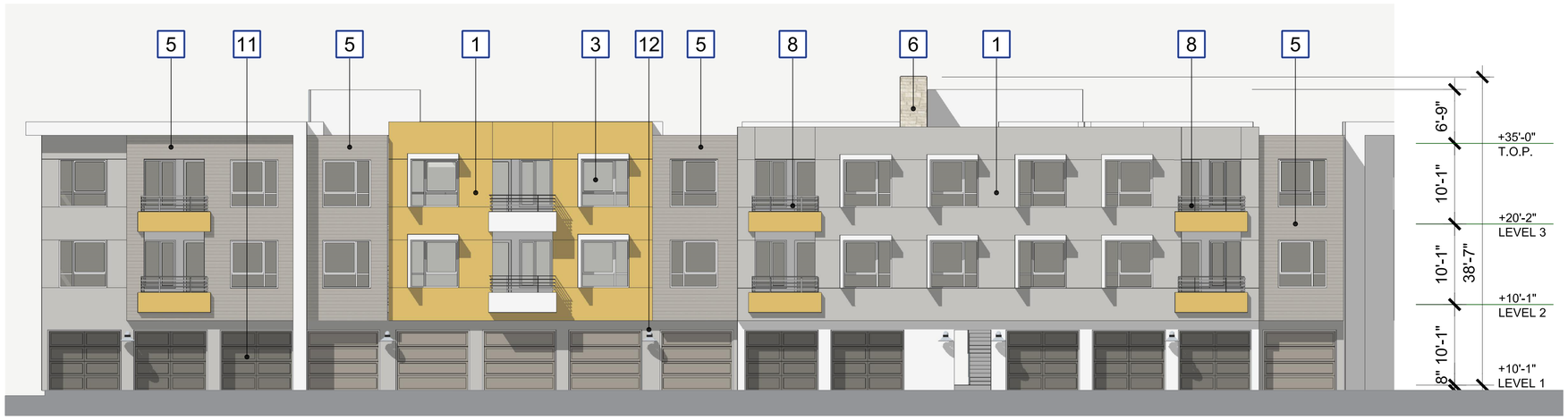


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



COURTYARD NORTH ELEVATION



COURTYARD SOUTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

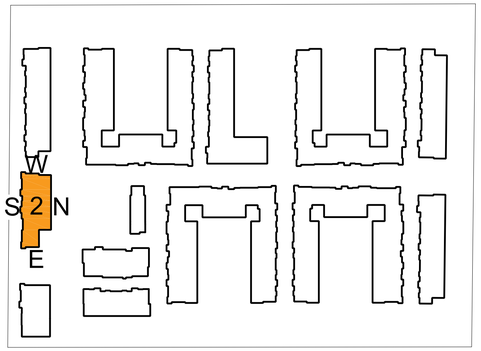
TYPE C.2 - BLDG. 9 ELEVATIONS - 3

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.4.8

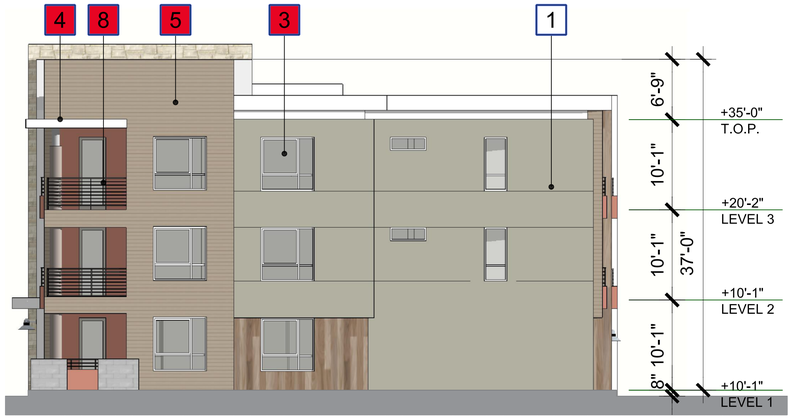
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.3 BUILDING COLOR MAP
FOR COLOR SCHEME



EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION



NORTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

TYPE D - BLDG. 2 ELEVATIONS

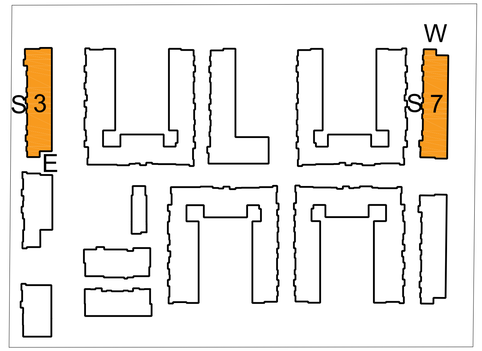
SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.5.2

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

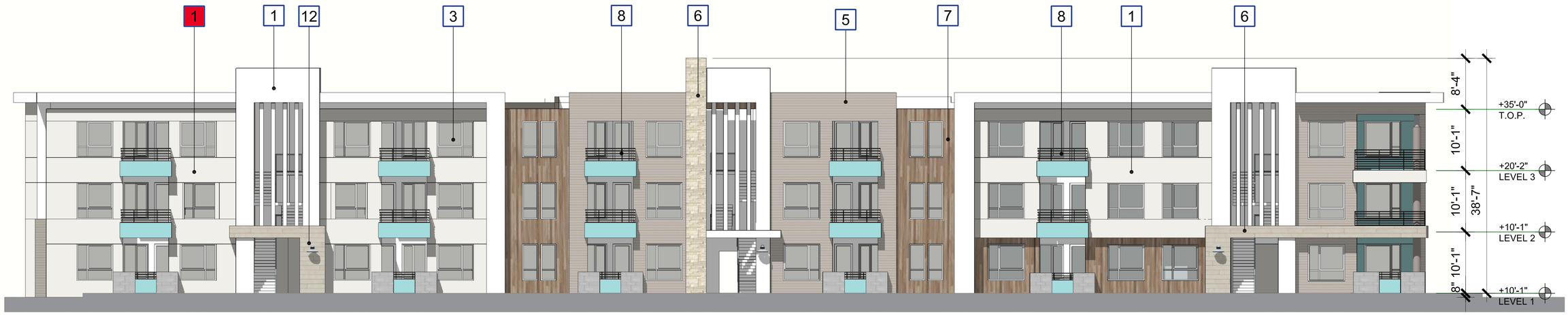
Redland

NOTE:
SEE M6.1 BUILDING COLOR MAP
FOR COLOR SCHEME

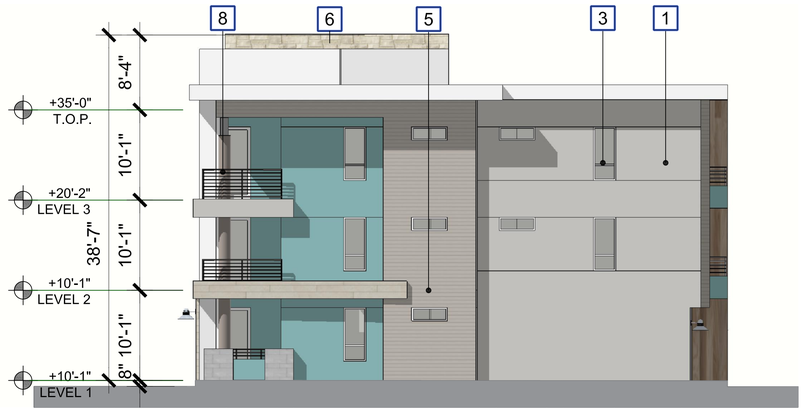


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



SOUTH ELEVATION



BUILDING 3 EAST / BUILDING 7 WEST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

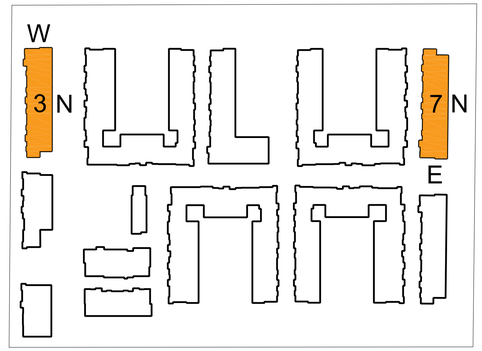
TYPE F - BLDG. 3 & 7 ELEVATIONS - 1

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.7.2

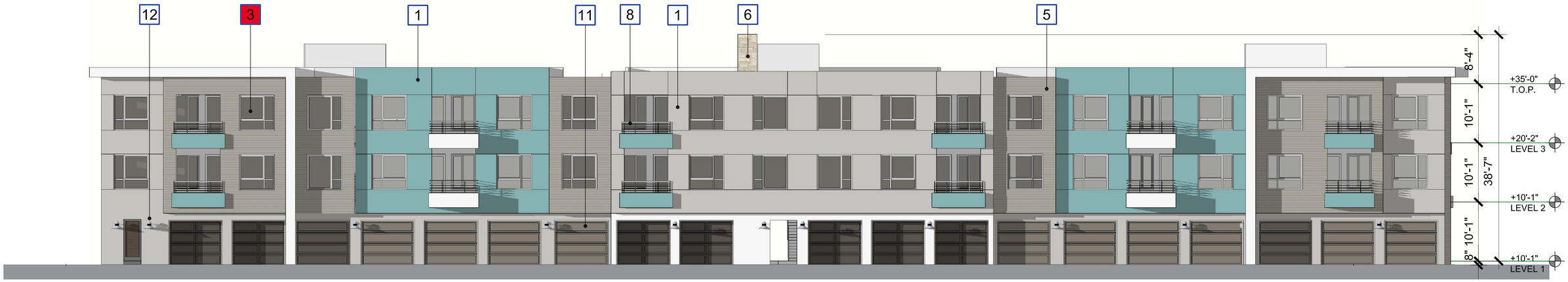
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.1 BUILDING COLOR MAP
FOR COLOR SCHEME



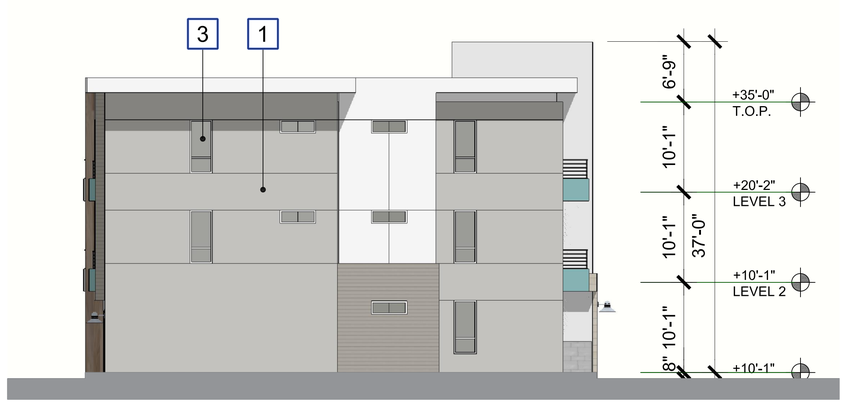
EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE

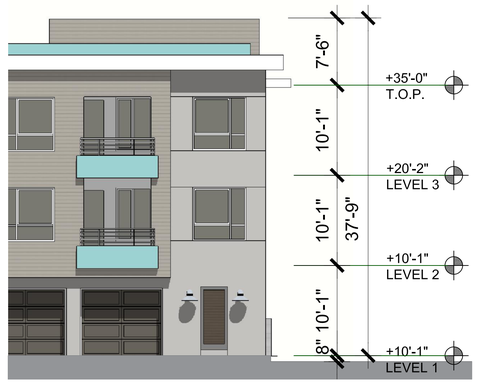


BUILDING 3 NORTH ELEVATION -
ELECTRICAL ROOM @ EAST END GARAGE

BUILDING 3 NORTH ELEVATION



BUILDING 3 WEST / BUILDING 7 EAST ELEVATION



BUILDING 7 NORTH ELEVATION -
ELECTRICAL ROOM @ WEST END GARAGE

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

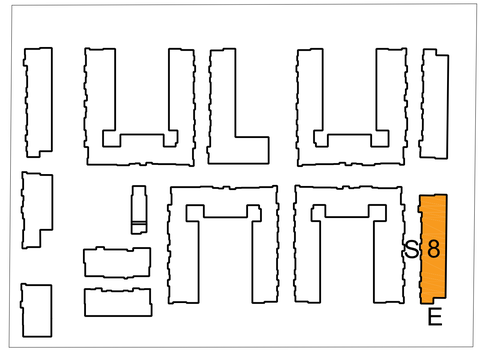
TYPE F - BLDG. 3 & 7 ELEVATIONS - 2

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.7.3

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.4 BUILDING COLOR MAP
FOR COLOR SCHEME

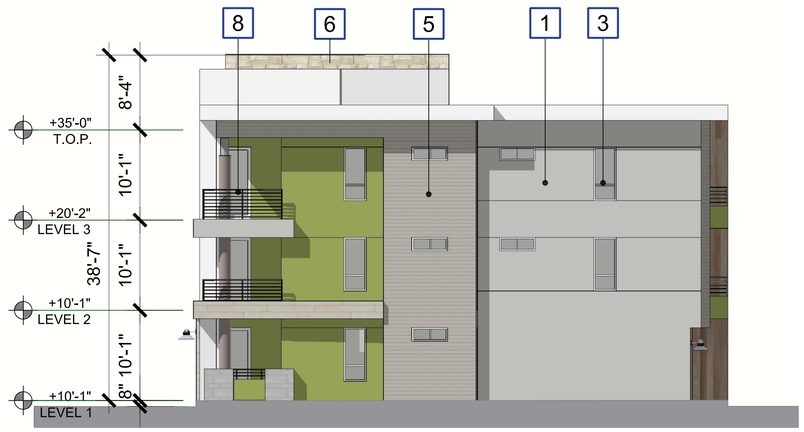


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



SOUTH ELEVATION



EAST ELEVATION

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

THE NEIGHBORHOODS AT LUGONIA VILLAGE

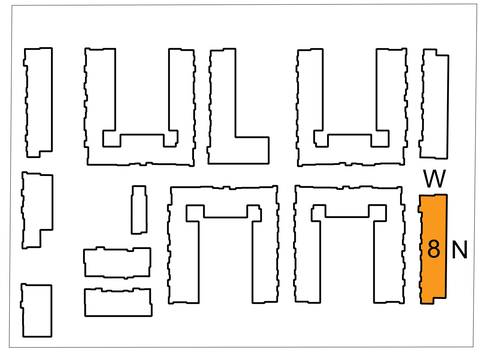
REDLANDS, CA

TYPE F - BLDG. 8 ELEVATIONS - 1

M-2.7.4

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.4 BUILDING COLOR MAP
FOR COLOR SCHEME

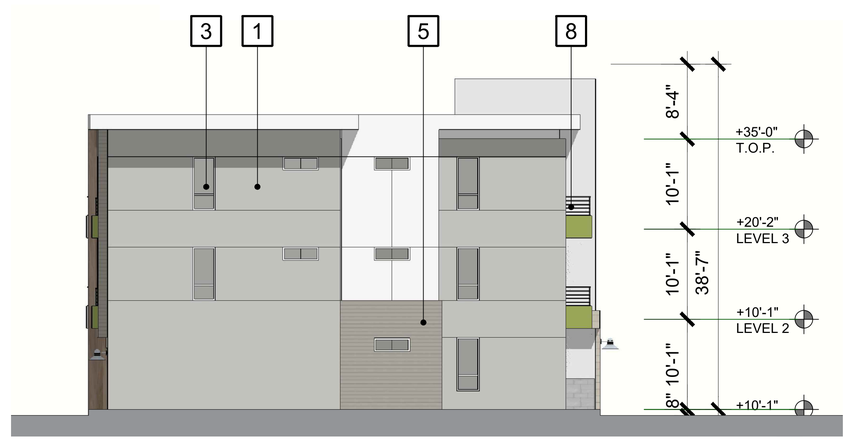


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



NORTH ELEVATION



WEST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

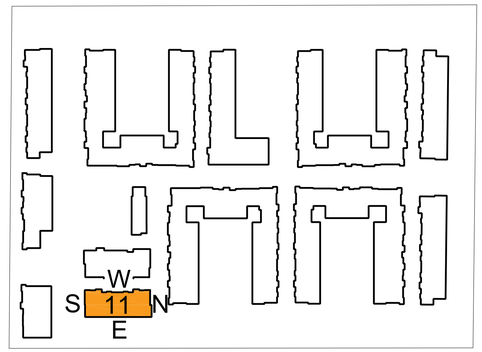
TYPE B - BLDG. 8 ELEVATIONS - 2

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.7.5

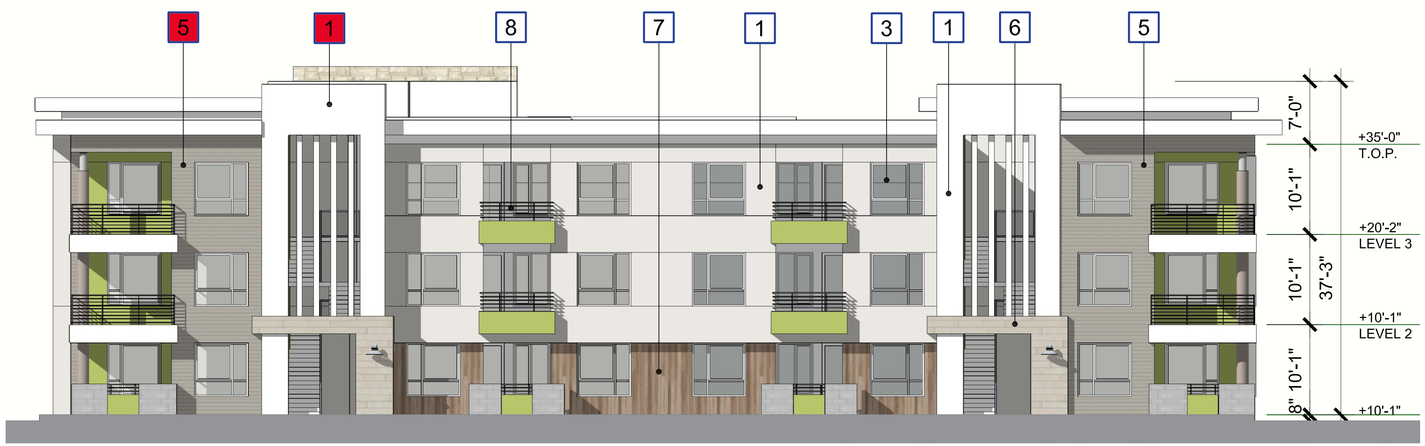
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.4 BUILDING COLOR MAP
FOR COLOR SCHEME



EXTERIOR ELEVATION KEYNOTES

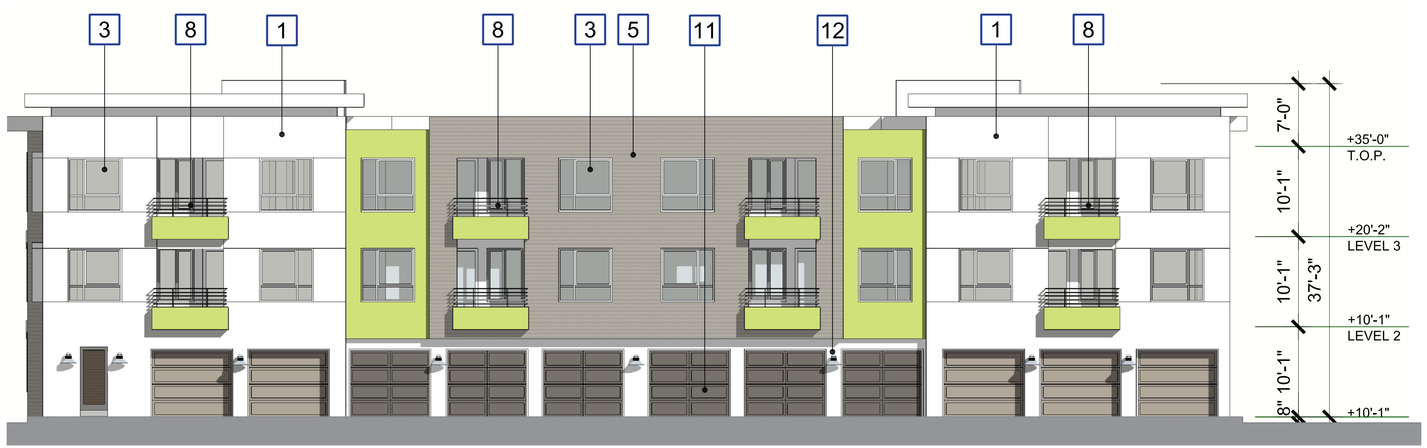
1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



WEST ELEVATION



NORTH ELEVATION



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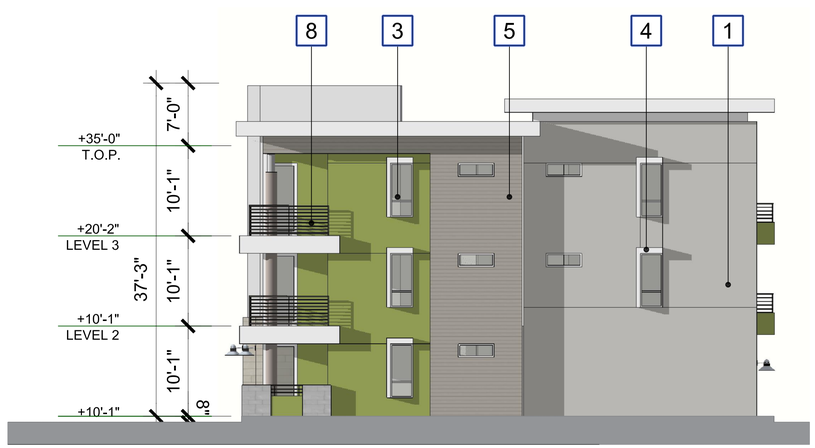


SOUTH ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

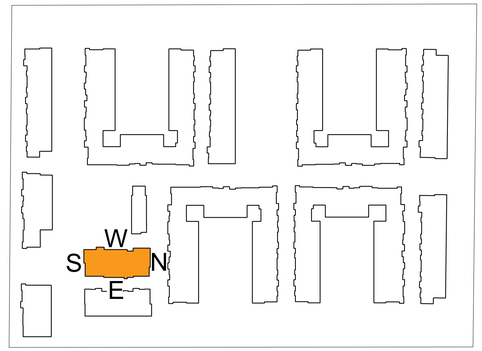
TYPE E - BLDG. 11 ELEVATIONS

SCALE : 1/8"= 1'-0"
DATE: 06-05-2023
JOB NO.: 2021-046

M-2.6.2

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.3 BUILDING COLOR MAP
FOR COLOR SCHEME

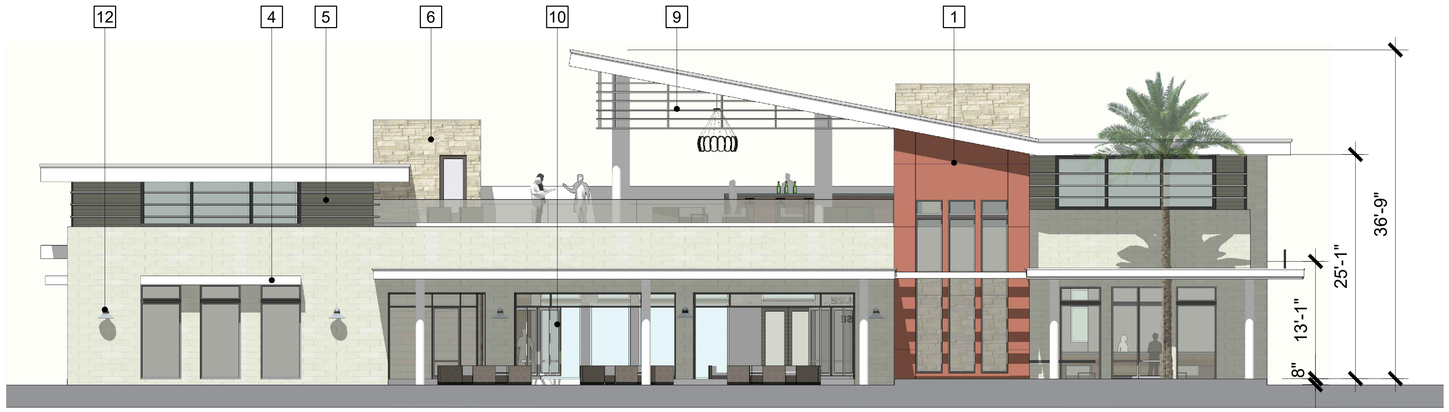


EXTERIOR ELEVATION KEYNOTES

1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



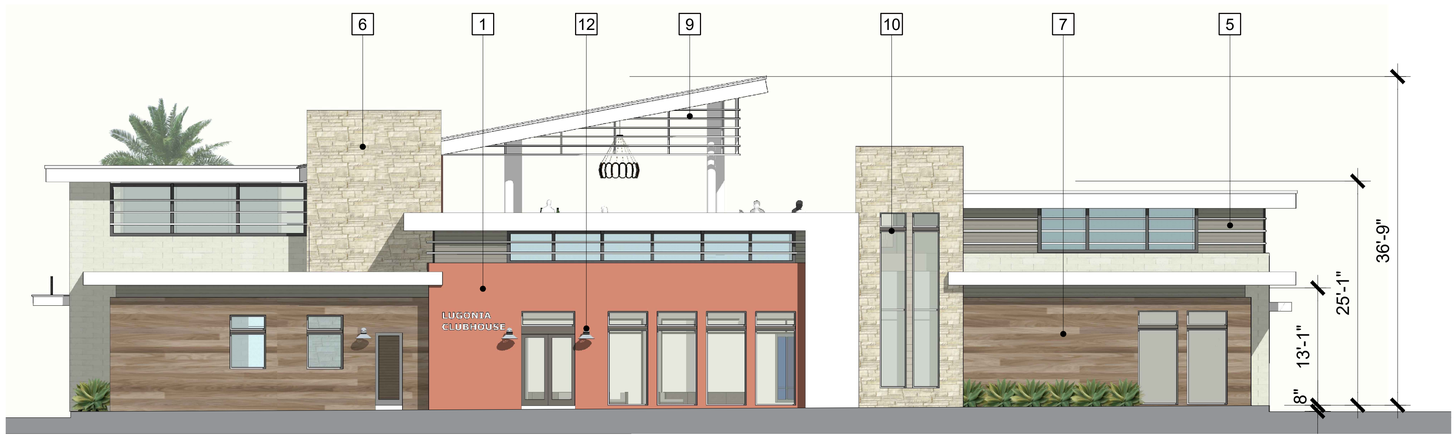
SOUTH ELEVATION



WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

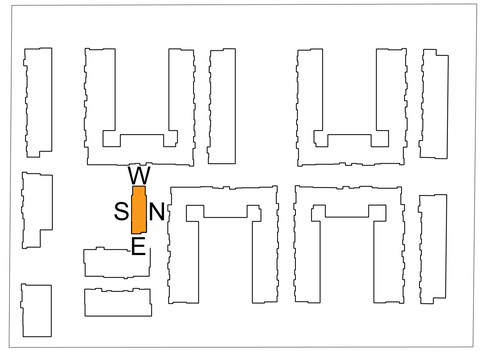
LEASING / CLUBHOUSE ELEVATIONS

SCALE : 3/16"= 1'-0"
DATE: 08-11-2022
JOB NO.: 2021-046

M-4.2

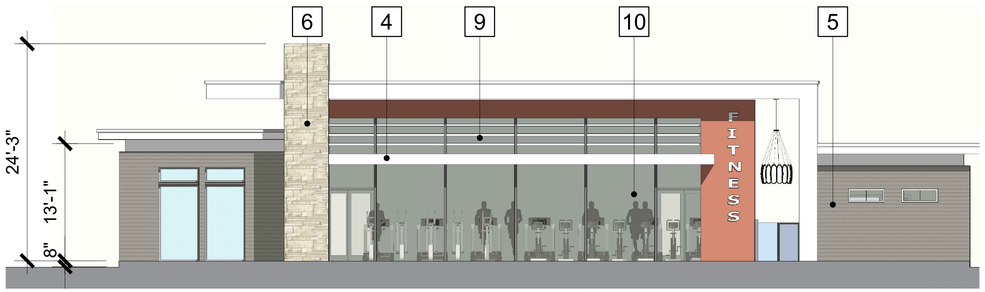
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

NOTE:
SEE M6.3 BUILDING COLOR MAP
FOR COLOR SCHEME

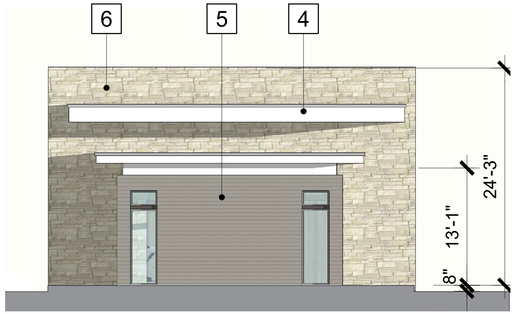


EXTERIOR ELEVATION KEYNOTES

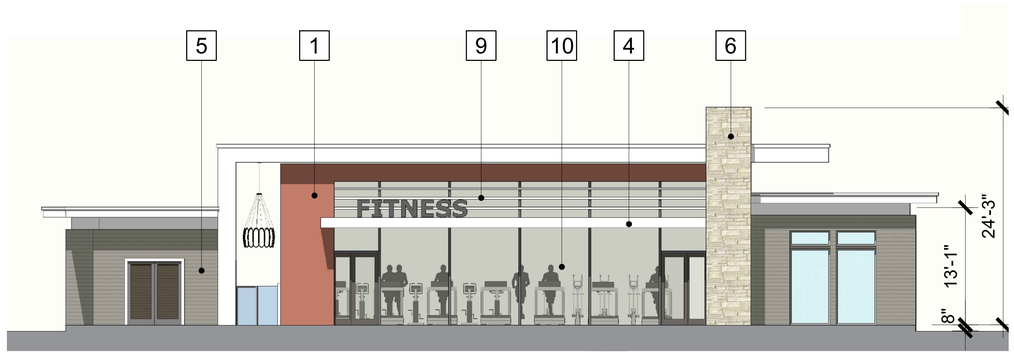
1. EXTERIOR PLASTER
2. STANDING SEAM METAL ROOF
3. VINYL WINDOW
4. SHADE CANOPY
5. HARDIE PLANK LAP SIDING SMOOTH
6. VENEER STONE
7. PORCELAIN TILE
8. BALCONY RAILING
9. SUN SHADE LOUVER
10. STORE FRONT SYSTEM
11. GARAGE DOOR
12. EXTERIOR WALL MOUNTED FIXTURE



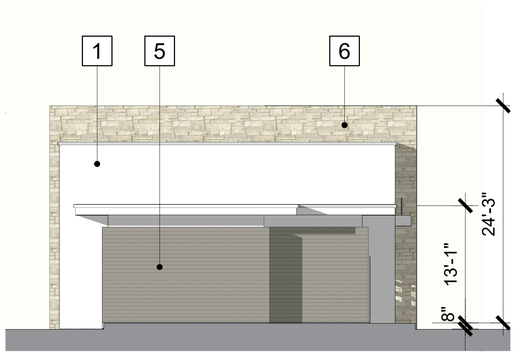
SOUTH ELEVATION



WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

FITNESS ELEVATIONS

SCALE : 3/16"= 1'-0"
DATE: 08-11-2022
JOB NO.: 2021-046

M-4.3

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



PLAN 2
RIGHT ELEVATION

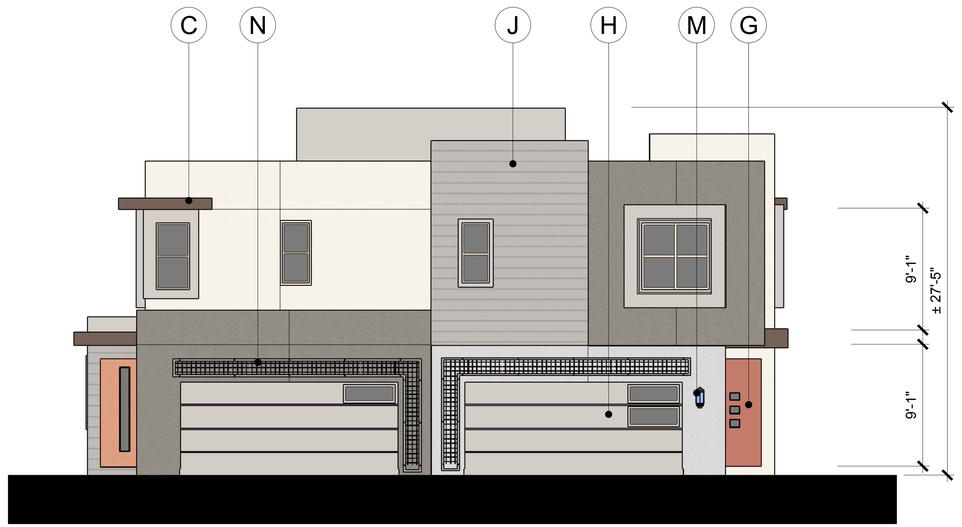


PLAN 2 PLAN 1
REAR ELEVATION

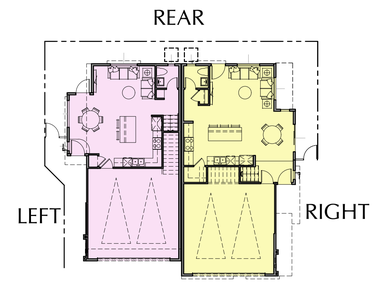
A - ROOF PARAPET
B - STUCCO
C - STUCCO EYEBROW CANTILEVER
D - STUCCO POP OUT
E - STUCCO WRAPPED FOAM TRIM
F - WINDOW
G - ENTRY DOOR
H - GARAGE DOOR
J - SIMULATED WOOD SIDING
K - SIMULATED WOOD TRIM
L- SOFFIT OPENING
M- LIGHT FIXTURE
N - METAL VINE TRELLIS



PLAN 1
LEFT ELEVATION



PLAN 1 PLAN 2
FRONT ELEVATION



BUILDING 1

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

BUILDING B1 - ELEVATIONS

3/16"=1'-0" 0 1' 2' 4' 8'

DATE: 06-05-2023
JOB NO.: 2207

PH-3.0

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



PLAN 2
RIGHT ELEVATION

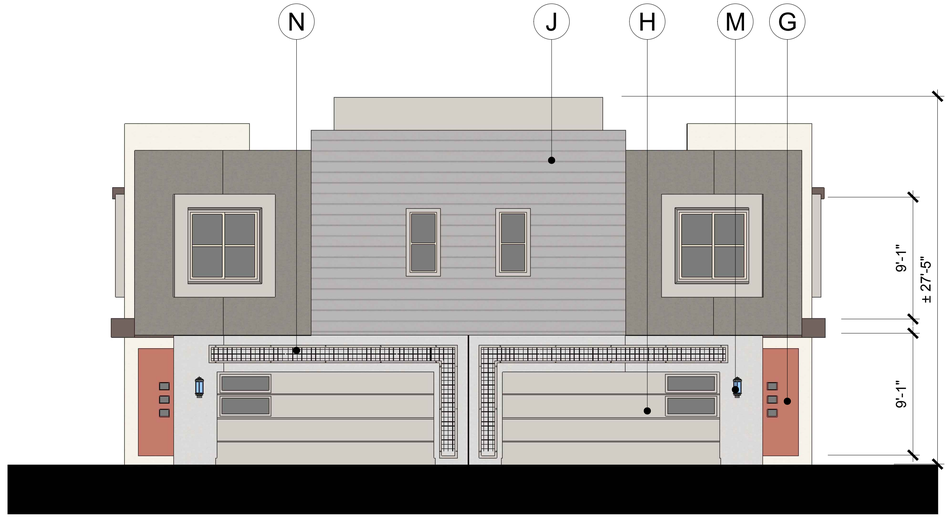


PLAN 2
REAR ELEVATION

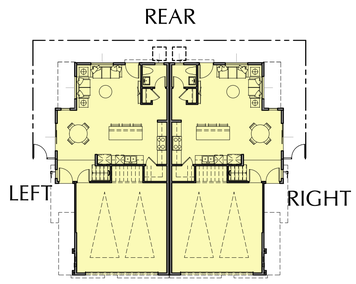
A - ROOF PARAPET
B - STUCCO
C - STUCCO EYEBROW CANTILEVER
D - STUCCO POP OUT
E - STUCCO WRAPPED FOAM TRIM
F - WINDOW
G - ENTRY DOOR
H - GARAGE DOOR
J - SIMULATED WOOD SIDING
K - SIMULATED WOOD TRIM
L- SOFFIT OPENING
M- LIGHT FIXTURE
N - METAL VINE TRELLIS



PLAN 2
LEFT ELEVATION



PLAN 2
FRONT ELEVATION



BUILDING 2

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

BUILDING B2 - ELEVATIONS

3/16"=1'-0" 0 1' 2' 4' 8'

DATE: 06-05-2023
JOB NO.: 2207

PH-3.1

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



PLAN 2X
RIGHT ELEVATION



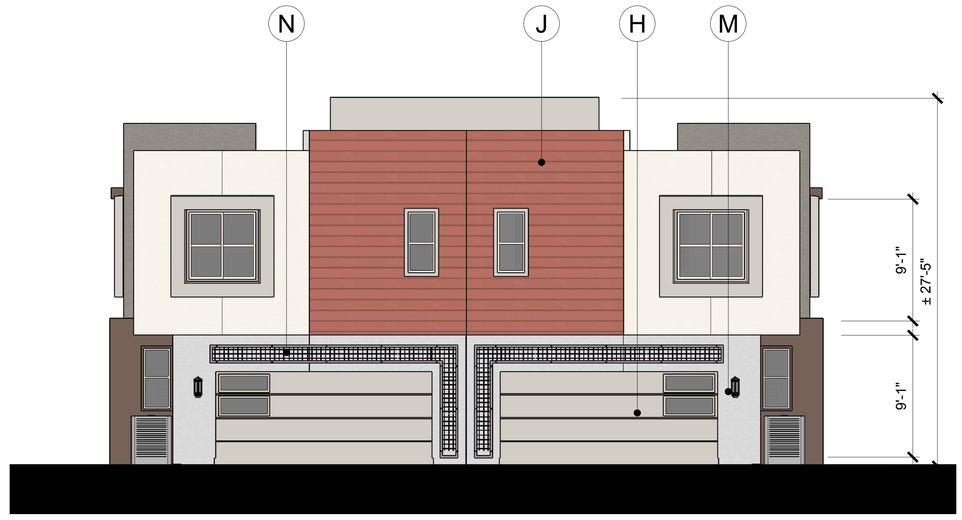
PLAN 2X
REAR ELEVATION

PLAN 2X

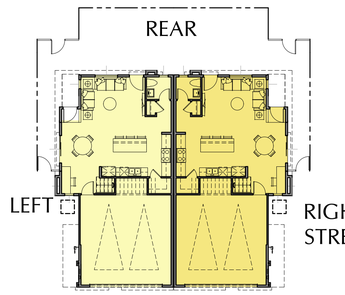
A - ROOF PARAPET
B - STUCCO
C - STUCCO EYEBROW CANTILEVER
D - STUCCO POP OUT
E - STUCCO WRAPPED FOAM TRIM
F - WINDOW
G - ENTRY DOOR
H - GARAGE DOOR
J - SIMULATED WOOD SIDING
K - SIMULATED WOOD TRIM
L- SOFFIT OPENING
M- LIGHT FIXTURE
N - METAL VINE TRELLIS



PLAN 2X
LEFT ELEVATION



PLAN 2X
FRONT ELEVATION



FRONT
BUILDING B2X

PLAN 2X

BUILDING 2X

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

BUILDING B2X - ELEVATIONS

3/16"=1'-0" 0 1' 2' 4' 8'

DATE: 06-05-2023
JOB NO.: 2207

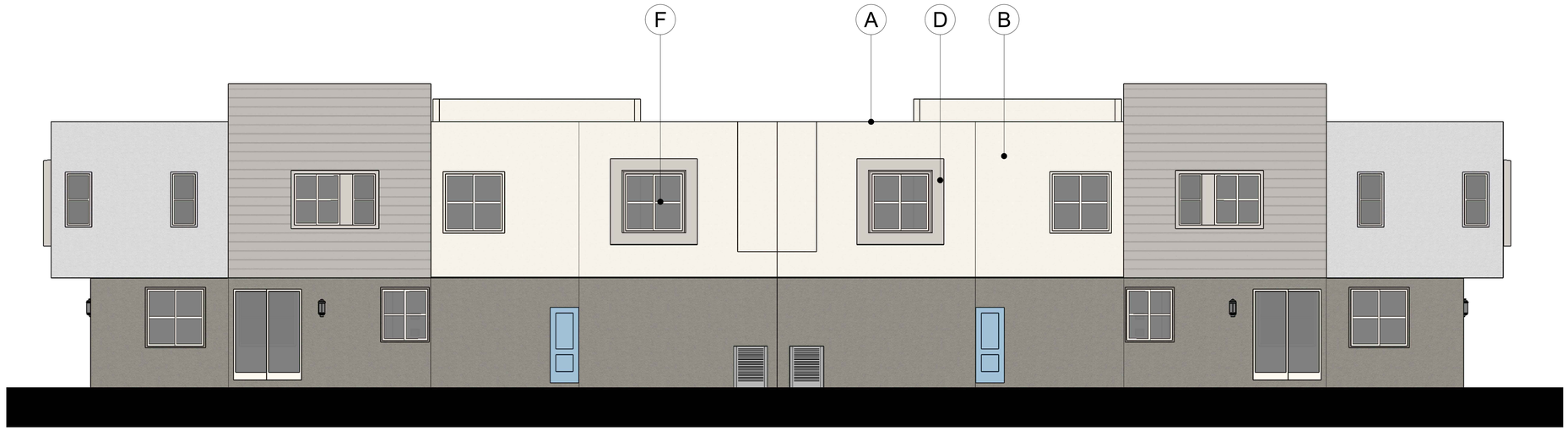
PH-3.2

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

Redlands



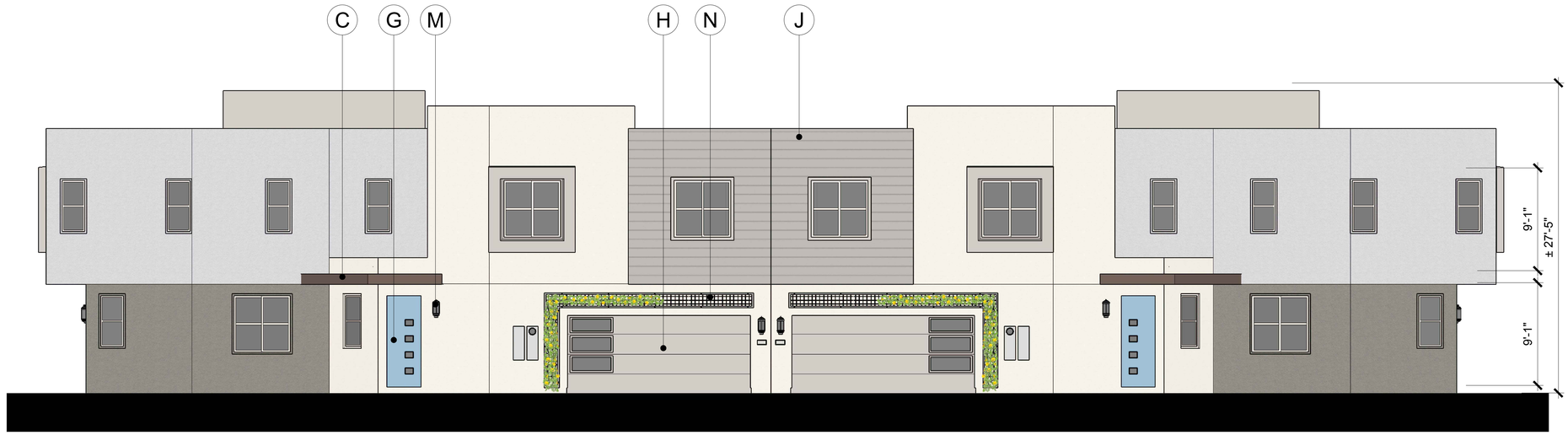
PLAN 3
RIGHT ELEVATION



PLAN 3
REAR ELEVATION



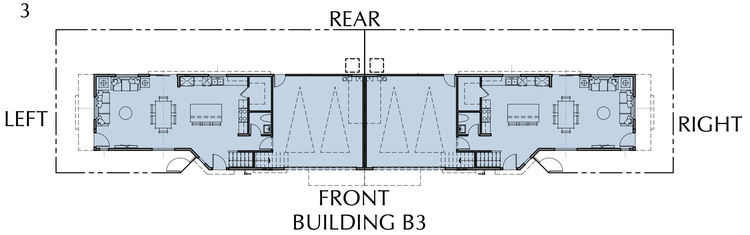
PLAN 3
LEFT ELEVATION



PLAN 3
FRONT ELEVATION

A -	ROOF PARAPET
B -	STUCCO
C -	STUCCO EYEBROW CANTILEVER
D -	STUCCO POP OUT
E -	STUCCO WRAPPED FOAM TRIM
F -	WINDOW
G -	ENTRY DOOR
H -	GARAGE DOOR
J -	SIMULATED WOOD SIDING
K -	SIMULATED WOOD TRIM
L-	SOFFIT OPENING
M-	LIGHT FIXTURE
N -	METAL VINE TRELLIS

PLAN 3



BUILDING B3

3/16"=1'-0" 0 1' 2' 4' 8'

BUILDING 3

THE NEIGHBORHOODS AT LUGONIA VILLAGE

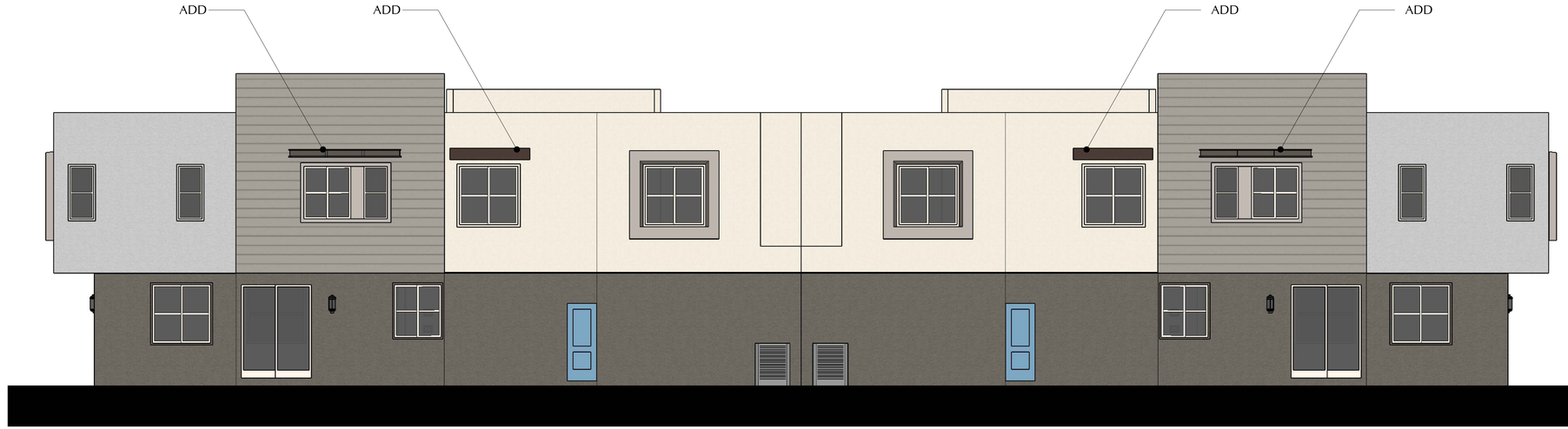
REDLANDS, CA

BUILDING B3 - ELEVATIONS

DATE: 06-05-2023
JOB NO.: 2207

PH-3.3

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



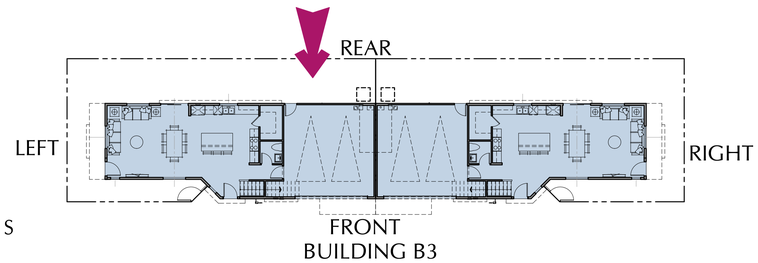
PLAN 3

PLAN 3



WEST FACING EDGE

REAR ELEVATION
ADDITIONAL SHADING @ WEST FACING LOCATIONS



BUILDING 3

3/16"=1'-0" 0 1' 2' 4' 8'

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

BUILDING B3S - ELEVATIONS

DATE: 06-05-2023
JOB NO.: 2207

PH-3.4

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



PLAN 4

RIGHT/STREET ELEVATION



A - ROOF PARAPET
B - STUCCO
C - STUCCO EYEBROW CANTILEVER
D - STUCCO POP OUT
E - STUCCO WRAPPED FOAM TRIM
F - WINDOW
G - ENTRY DOOR
H - GARAGE DOOR
J - SIMULATED WOOD SIDING
K - SIMULATED WOOD TRIM
L- SOFFIT OPENING
M- LIGHT FIXTURE
N - METAL VINE TRELLIS
O - METAL EYEBROW CANTILEVER

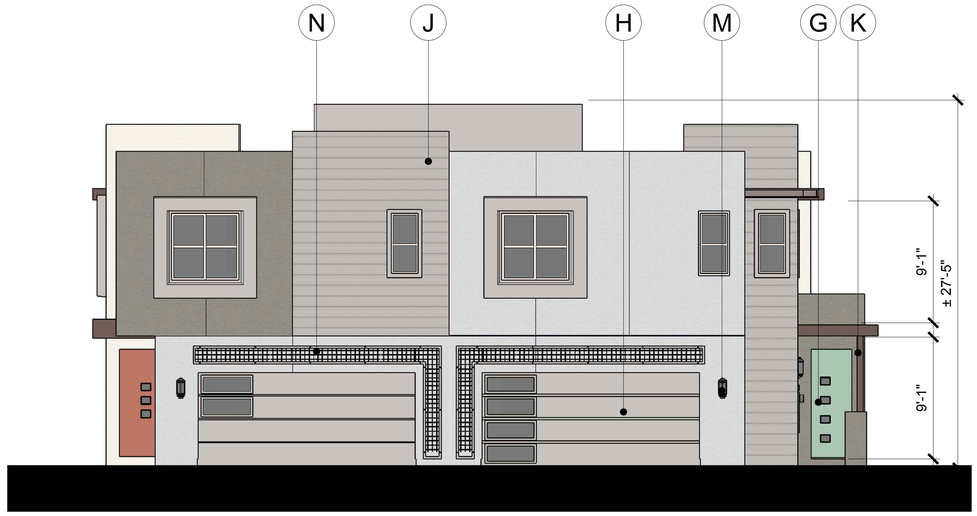
PLAN 4 PLAN 2

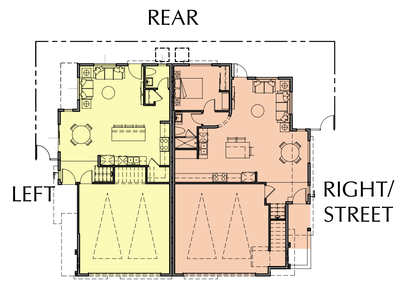
REAR ELEVATION



PLAN 2

LEFT ELEVATION





PLAN 2 PLAN 4

FRONT ELEVATION

BUILDING 4

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

BUILDING B4 - ELEVATIONS

3/16"=1'-0" 0 1' 2' 4' 8'

DATE: 06-05-2023
JOB NO.: 2207

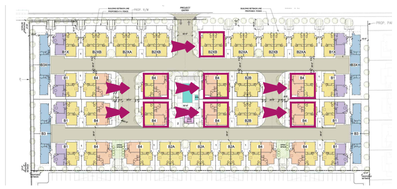
PH-3.5

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

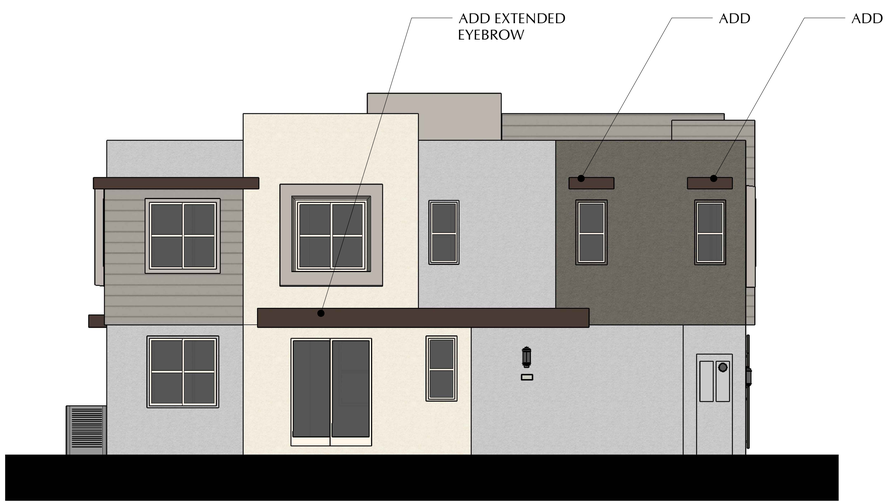


PLAN 4

RIGHT/STREET ELEVATION
ADDITIONAL SHADING @ WEST FACING LOCATIONS

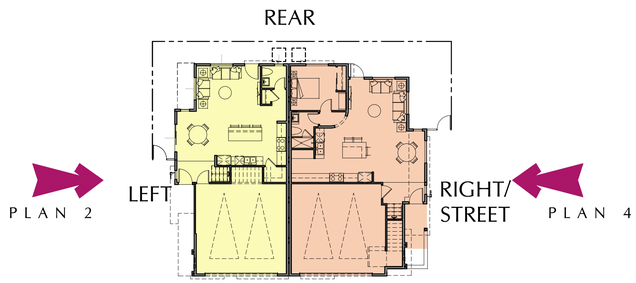


WEST FACING EDGE



PLAN 2

LEFT ELEVATION
ADDITIONAL SHADING @ WEST FACING LOCATIONS



BUILDING 4

3/16"=1'-0" 0 1' 2' 4' 8'

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

BUILDING B4S - ELEVATIONS

DATE: 06-05-2023
JOB NO.: 2207

PH-3.6

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888



PLANT LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QTY. NBHD -A	QTY. NBHD -B	QTY. NBHD -C
TREES						
	Aloe bainesii	Tree Aloe	24"B	53	0	0
	Cereidium hybrid 'Desert Museum'	Hybrid Palo Verde	24"B	26	0	0
	Strelitzia nicolai	Giant Bird-of-Paradise	24"B	0	27	0
	Chitalpa tashkentensis 'Pink Dawn'	Pink Dawn Chitalpa	24"B	21	0	0
	Citrus Spp.	Citrus species	24"B	7	0	0
	Arbutus 'Marina'	Strawberry Tree	24"B	0	17	0
	Lagerstromia species	Crape Myrtle	36"B	0	11	0
	Magnolia grandiflora 'Saint Mary'	Southern Magnolia	36"B	32	6	0
	Olea Europaea	Olive Tree	14x14 Field Grown	11	2	0
	Platanus racemosa	California Sycamore	24"B	0	20	0
	Podocarpus gracilior	Fern Pine	24"B	71	0	0
	Pyrus calleryana 'Bradford'	Bradford Pear	24"B	21	0	0
	Rhus lancea	African Sumac	48"B	17	0	0
	Specimen Tree	To be selected	72"B	1	3	0
	Tristania conferta Acacia stenophylla	Brisbane Box Shoestring Acacia	36"B 24"B	94	27	0
	Front yard street trees to be selected			0	0	46
	Street tree	T.B.D.	24"B			
PALMS						
	Phoenix dactylifera	Date Palm	20' BTH	25	0	0
	Dypsis Decaryi	Triangle Palm	10' BTH	0	18	0

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
SHRUBS			
	Agave 'Blue Flame'	Blue Flame Agave	5G
	Agave weberi	Weber's Century Plant	5G
	Aloe striata	Coral Aloe	5G
	Anigozanthos hybrids	Dwarf Kangaroo Paw	5G
	Asparagus d. 'Myers'	Myer's Asparagus	5G
	Bougainvillea 'La Jolla'	Bougainvillea	5G
	Buxus microphylla	Japanese Boxwood	5G
	Carex tumulicola	Foothill Sedge	5G
	Chondropetalum tectorum	Cape Rush	5G
	Dianella revoluta 'DR5000'	Little Rev Flax Lily	5G
	Dianella t. 'Silver Streak'	Silver Streak Flax Lily	5G
	Euphorbia tirucalli	Sticks on Fire	5G
	Myoporum pacificum	Myoporum	5G
	Pittosporum tobira	Tobira	5G
	Strelitzia reginae	Bird-of-Paradise	5G
	Trachelospermum jasminoides	Star Jasmine	5G
	Turf Synthetic turf		

LEGEND

1. VEHICULAR MAIN ENTRY
   - UNIT PAVERS MOTOR COURT W/ ZERO CURB
   - DECORATIVE BOLLARDS DEFINE THE SPACE
   - LOW STONE VENEER ACCENT/MONUMENT WALLS
   - CENTRAL DRIVEWAY
   - DUAL SLIDING GATES (GATES MATCH POCKET WALLS WHEN CLOSED)
2. CLUB BUILDING
   - PEDESTRIAN COLONNADE BETWEEN CLUB BUILDING AND POOL W/ BBQ & FIRE TABLES
   - LARGE EAVES PROVIDE SHADE
   - PALM GROWING THRU CUT CIRCLES IN THE ROOF
3. POOL AREA
   - LARGE RESORT STYLE POOL
   - BUILT-IN CABANAS W/ LARGE EXTENDED ROOF FOR SHADE
   - SYNTHETIC TURF PANELS
4. KIDS CLUB
   - 1ST FLOOR CLUB PLAY ROOM
   - LARGE OUTDOOR TOT LOT PLAY AREA
5. CENTRAL SPINE GREEN BELT
   - 40' TO 60' WIDE LINEAR NORTH/SOUTH GARDEN
   - 8' DECORATIVE WALKWAYS
   - CENTRAL TURF MOUNDED OVALS FRAMED BY SHADED TREES
   - COVERED FIRE PIT NODES
6. THEMED SHADE STRUCTURE TO COVER WALKS AT BUILDING ENTRIES
7. ENCLOSED DOG PARK
8. INTERNAL COURTYARDS
   - LUSHLY LANDSCAPED
   - SYNTHETIC TURF PANELS
   - BBQ NODES W/ WOOD TILE PAVING
9. SECONDARY ACCESS SLIDING GATE
10. TOWNHOME VEHICULAR ENTRY
    - DECORATIVE PAVING MOTOR COURT
11. CENTRAL REC BUILDING
    - THEMED POOL BUILDING
    - ENTERTAINMENT COURTYARD
    - POOL W/ DECORATIVE SUN DECK
    - SPA W/ MURAL BACKDROP WALL
12. NEIGHBORHOOD MONUMENT
13. POCKET PARKS (2 TOTAL) (A) (B)
    - BBQ
    - CORN HOLE/ BOCCI BALL
    - VARIETY OF SEATING
    - FIRE PITS
14. NEIGHBORHOOD PRIVATE OPEN SPACE PARK W/ D.G PATH, CENTRAL TURF & BENCHES
15. SINGLE FAMILY FRONT YARD LANDSCAPING TO MATCH NEIGHBORHOOD CHARACTERS
16. PRIVATE PATIOS & LANDSCAPE

PRELIMINARY SITE PLAN

1"=50'-0" (0, 25', 50', 100', 150')

NORTH

L-1.0

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-05-23
JOB NO.: 21-050

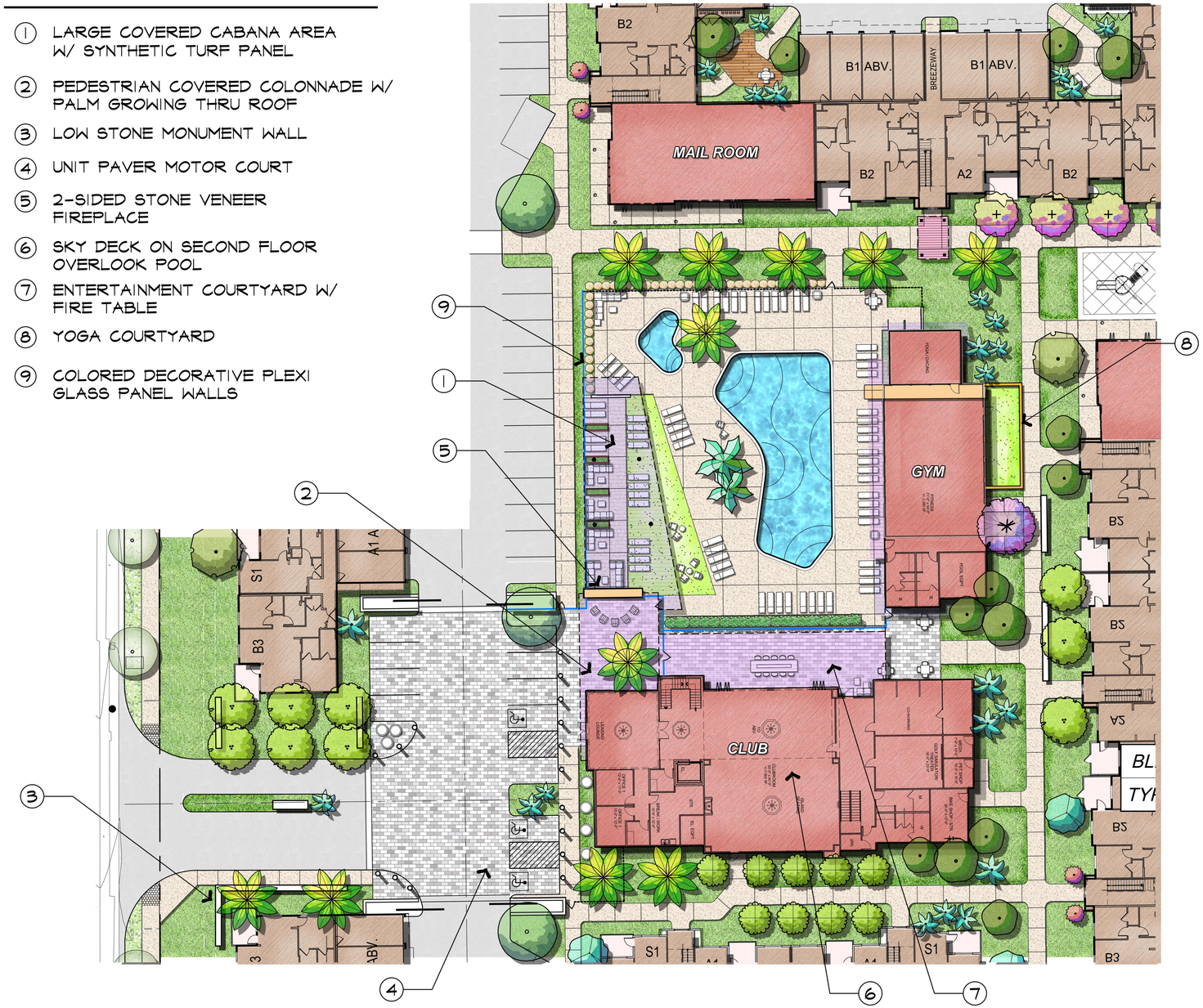
REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

SITESCAPES
Landscape Architecture & Planning
3190-B2 Airport Loop Drive
Costa Mesa, CA 92626
Richard Polhamus, License # 2782
(949) 644-9370 FAX (714) 210-3140

AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE, CA 92866
(714) 639-9860
Architecture. Design. Relationships.

LEGEND

1. LARGE COVERED CABANA AREA W/ SYNTHETIC TURF PANEL
2. PEDESTRIAN COVERED COLONNADE W/ PALM GROWING THRU ROOF
3. LOW STONE MONUMENT WALL
4. UNIT PAVER MOTOR COURT
5. 2-SIDED STONE VENEER FIREPLACE
6. SKY DECK ON SECOND FLOOR OVERLOOK POOL
7. ENTERTAINMENT COURTYARD W/ FIRE TABLE
8. YOGA COURTYARD
9. COLORED DECORATIVE PLEXI GLASS PANEL WALLS









ENLARGEMENTS

1"=20'-0" 0 10' 20' 40' 60'

NORTH

L-2.0

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-05-23
JOB NO.: 21-050

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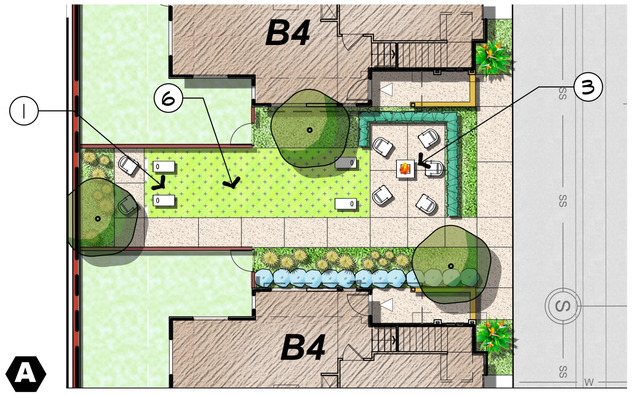

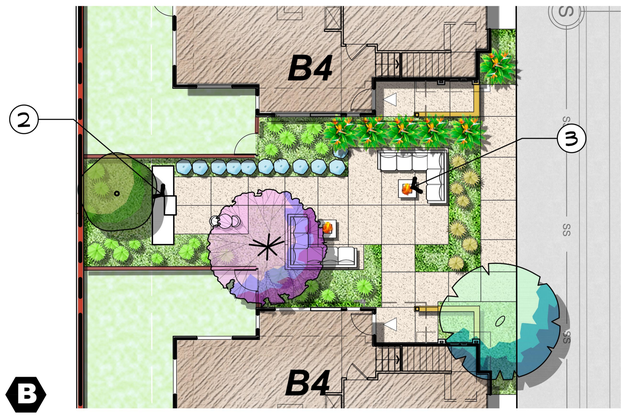

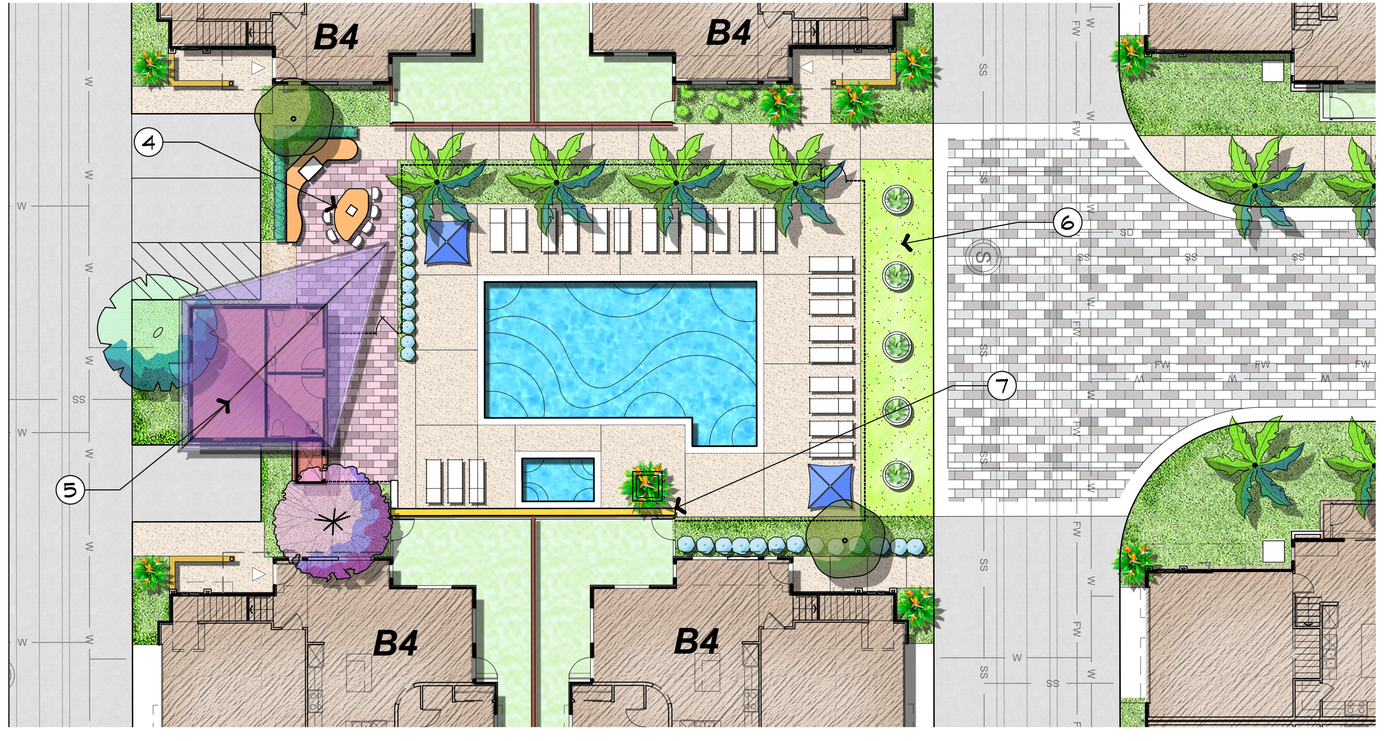





LEGEND

1. BOCCI BALL/ CORN HOLE COURT
2. BBQ W/ COUNTER
3. FIRE TABLE
4. ENTERTAINMENT COURTYARD
   - BBQ W/ COUNTER
   - CENTER BAR HEIGHT ISLAND
5. THEMED RESTROOM BUILDING
6. SYNTHETIC TURF
7. 8' MURAL SPA BACKDROP WALL

ENLARGEMENTS

1"=10'-0" (0, 5', 10', 20', 30')

NORTH

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

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L-3.0


LANDSCAPE AS SCULPTURE


HARDSCAPE & SOFTSCAPE WORKING TOGETHER TO CREATE FORM & SCULPTURE


PALMS TO PROVIDE VARIETY OF ELEVATIONS & TO HELP DEFINE SPACES


USE PLANTS & GROUNDCOVER AS SCULPTURAL OPPORTUNITIES


INDOOR / OUTDOOR SPACES


USING HARDSCAPE, WALLS & PLANTS TO CREATE BALANCE


LARGE COVERED WALKWAY


LOW WALL & SYN. TURF TO CREATE INTEREST & TO PROVIDE FUNCTION

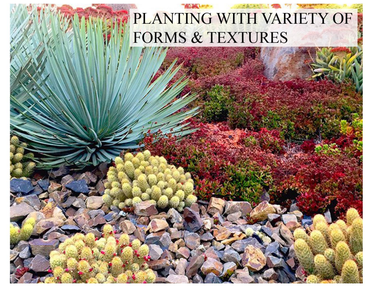

PANEL GATES - CLEAR OR SCREENED


POTS TO PROVIDE POPS OF COLOR


UNIQUE FENCING


MIXTURE OF WARM & COOL HARDSCAPE ELEMENTS

DESIGN INSPIRATION

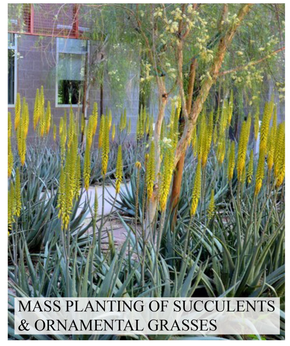

PLANTING WITH VARIETY OF FORMS & TEXTURES


BACKDROP PLANTING - SINGLE SPECIES


BOULDERS IN THE LANDSCAPE


TREES CREATING OUTDOOR ROOMS


SILHOUETTE LIGHTING


MASS PLANTING OF SUCCULENTS & ORNAMENTAL GRASSES

PLANTING INSPIRATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DESIGN INSPIRATION

L-4.0

DATE: 06-05-23
JOB NO.: 21-050

REDLANDS SUMMIT LLC
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MULTI-FAMILY PRODUCTION

California Water Efficient Landscape Worksheet - Multi-Family

Reference Evapotranspiration (ET_o)			55.6	Project Type	Residential		0.55
Hydrozone # / Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
HZ 1 - DRIP - LOW	0.2	Drip	0.81	0.25	12000	2963	102139
HZ 2 - DRIP - MOD.	0.5	Drip	0.81	0.62	108047	66696	2299133
Non-Irrigated Area			0.75	0.00	8586	0	0
Water Feature	1		1	1.00	2179	2179	75114
			0.75	0.00		0	0
				Totals	130812	71838	2476387
Special Landscape Areas							
			1			0	0
				Totals	0	0	0
						ETWU Total	2476387
						Maximum Allowed Water Allowance (MAWA)[e]	2480143

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	71838
Total Area	130812
Average ETAF	0.55

All Landscape Areas

Total ETAF x Area	71838
Total Area	130812
Average ETAF	0.55

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

Total Estimated Annual Water Usage: **2,476,387 Gallon/Year**

TOWNHOME PRODUCTION

California Water Efficient Landscape Worksheet - Townhomes

Reference Evapotranspiration (ET_o)			55.6	Project Type	Residential		0.55
Hydrozone # / Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
HZ 1 - DRIP - LOW	0.2	Drip	0.81	0.25	4500	1111	38302
HZ 2 - DRIP - MOD.	0.5	Drip	0.81	0.62	19876	12269	422942
Non-Irrigated Area			0.75	0.00	815	0	0
Water Feature	1		1	1.00	818	818	28198
			0.75	0.00		0	0
				Totals	26009	14198	489442
Special Landscape Areas							
			1			0	0
				Totals	0	0	0
						ETWU Total	489442
						Maximum Allowed Water Allowance (MAWA)[e]	493120

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	14198
Total Area	26009
Average ETAF	0.55

All Landscape Areas

Total ETAF x Area	14198
Total Area	26009
Average ETAF	0.55

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

Total Estimated Annual Water Usage: **489,442 Gallon/Year**

SINGLE FAMILY PRODUCTION

California Water Efficient Landscape Worksheet - Single Family

Reference Evapotranspiration (ET_o)			55.6	Project Type	Residential		0.55
Hydrozone # / Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
HZ 1 - DRIP - LOW	0.2	Drip	0.81	0.25	4500	1111	38302
HZ 2 - DRIP - MOD.	0.5	Drip	0.81	0.62	27716	17109	589769
Non-Irrigated			0.75	0.00	1098	0	0
			0.75	0.00		0	0
				Totals	33314	18220	628071
Special Landscape Areas							
HZ 3 - ROTATOR - HIGH - PLAYABLE			1		1938	1938	66807
			1			0	0
				Totals	1938	1938	66807
						ETWU Total	694878
						Maximum Allowed Water Allowance (MAWA)[e]	698427

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	18220
Total Area	33314
Average ETAF	0.55

All Landscape Areas

Total ETAF x Area	20158
Total Area	35252
Average ETAF	0.57

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

Total Estimated Annual Water Usage: **694,878 Gallon/Year**

IRRIGATION ESTIMATED WATER USAGE PLAN

1"=50'-0" 0 25' 50' 100' 150'

NORTH

L-7.0

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-05-23
JOB NO.: 21-050

REDLANDS SUMMIT LLC
1705 OAK GROVE AVE., SAN MARINO, CA 91108

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Costa Mesa, CA 92626
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AO ARCHITECTS
144 NORTH ORANGE ST., ORANGE, CA 92866
(714) 639-9860
Architecture.
Design.
Relationships.



THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

FENCE & WALL PLAN

1"=50'-0" 0 25' 50' 100' 150'

NORTH

DATE: 06-05-23
JOB NO.: 21-050

L-5.0

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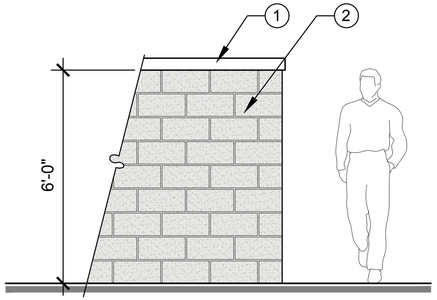
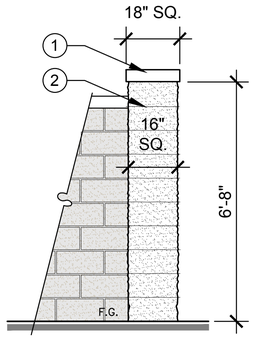


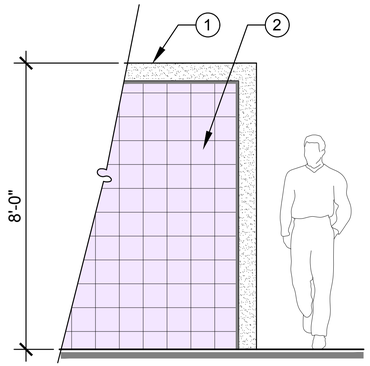
1. 4" THICK PRECAST CONCRETE CAP
2. 6x8x16 SPLIT FACE CMU WALL COLOR: TAN

6' HT. SPLIT FACE BLOCK WALL



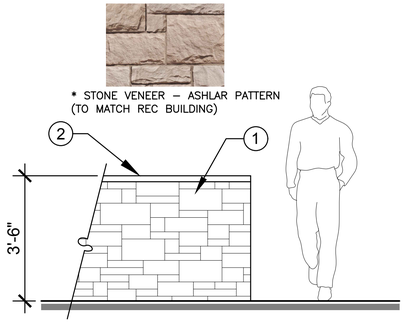
1. 4" THICK PRECAST CONCRETE CAP
2. 6x16x16 CMU BLOCK COLUMN W/ SMOOTH STUCCO FINISH

PILASTER



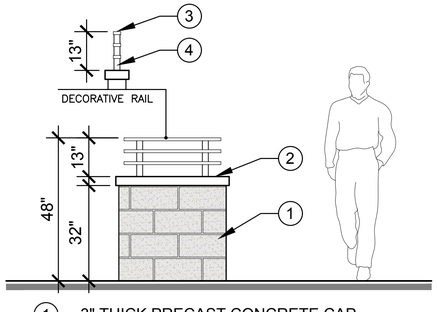
1. 8x8x16 CMU BLOCK WALL W/ SMOOTH STUCCO FINISH
2. DECORATIVE TILE VENEER

SMOOTH STUCCO WALL



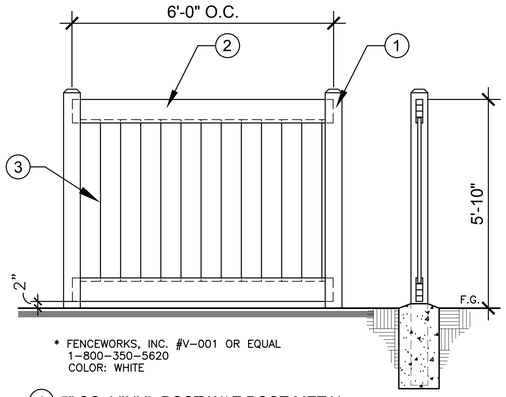
1. 8" WIDE CMU BLOCK WALL W/ STONE VENEER
2. 2" THICK PRECAST CONCRETE CAP

LOW STONE WALL



1. 3" THICK PRECAST CONCRETE CAP
2. 6x8x16 SPLIT FACE CMU WALL COLOR: TAN
3. 1x2 ½" T.S. HORIZONTAL RAIL, COLOR: BLACK
4. 2" SQ. T.S. POST, COLOR: BLACK

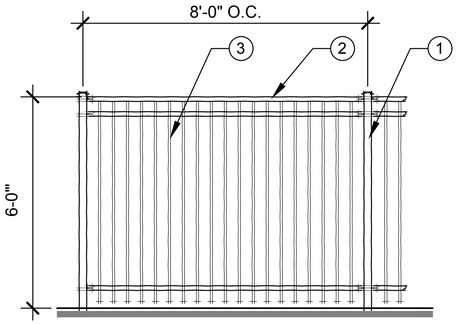
COURTYARD WALL



* FENCEWORKS, INC. #V–001 OR EQUAL
1–800–350–5620
COLOR: WHITE

1. 5" SQ. VINYL POST W/ Z POST METAL INSERT W/ DOMED CAP
2. 2" X 6 ½" TOP & BOTTOM RAILS W/ Z RAIL METAL INSERTS FOR BOTTOM RAIL
3. 1" X 8" TONGUE & GROOVE

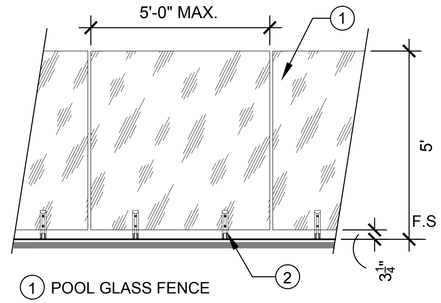
PRIVACY VINYL FENCE



* AMERISTAR FENCE – MAJESTIC 3–RAIL W/ EXTENDED PICKETS OR APPROVED EQUAL.

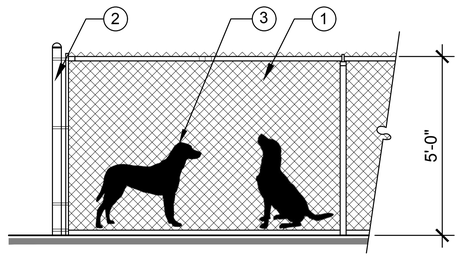
1. 2½" SQ. FENCE POST
2. 1½" SQ. TOP & BOTTOM RAILS
3. ⅝" SQ. PICKETS @ 4" O.C. MAX.

TUBULAR STEEL VIEW FENCE



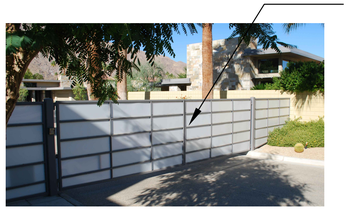
1. POOL GLASS FENCE
2. DAYTON RICHMOND DOWEL SPLICER SYSTEM

5' HT. GLASS WALL



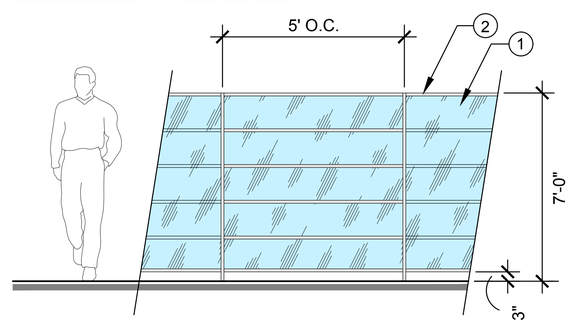
1. VINYL CLAD CHAIN-LINK FENCE COLOR: BLACK
2. 3" DIA. TUBULAR STEEL POST @ 8' O.C. MAX.
3. DOG BREED SIGN BOARD BY OTHERS

DOG PARK FENCE



VEHICULAR ENTRY GATE
* OPAQUE GLASS PANEL @ ENTRY GATE

1. GLASS PANEL WALL (OPAQUE &/OR CLEAR GLASS PANEL)
2. METAL FRAME



ENTRY GLASS WALL

FENCE & WALL DETAILS

1"=50'-0" 0 25' 50' 100' 150'

L-6.0

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

DATE: 06-05-23
JOB NO.: 21-050

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AO ARCHITECTS
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(714) 639-9860
Architecture. Design. Relationships.

INCLUSIONARY HOUSING PLAN

APPLICATION NUMBER: _____

City of Redlands
35 Cajon Street, Redlands, CA 92373
(909) 399-7555

Project Address: NW Corner of Lugonia Ave and Karon St

Assessor Parcel No(s): 0167-171-04-0000; 0167-171-05-0000; 0167-171-06-0000

Site Dimension: Approx 1,280' x 823'

Site Size (Square Feet): 1,064,038 SF (Gross) 988,066 SF (Net after street dedications)

Property Owner's Name: Redlands Summit LLC

Address: 2459 Huntington Dr, San Marino, CA 91108

Telephone: (626) 360-2888 Email: _____

Applicant's Name: Redlands Summit, LLC

Telephone: (626) 360-2888 Email: _____

I. INCLUSIONARY HOUSING ALTERNATIVES

Select the applicable alternatives to indicate how the project will comply with the inclusionary housing requirement:

__X__ On-site construction of Inclusionary Units

_____ Off-stie construction of Affordable Units

_____ Land dedication

_____ In-lieu fee payment for entire obligation

_____ In-lieu fee payment for fractional unit [1]

II. RESIDENTIAL PROJECT DESCRIPTION

Describe the project in the following chart:

# of Bedrooms	Unit Size (Sq. Ft.)	# of Market Rate Units	# of Very-low Income Units	# of Low Income Units	# of Moderate Income Units	Total # of Units
Studio		19	2			21
1		188	12			200
2		216	14			230
3		64				64
4		26				26
5						

Identify the gross livable floor area of proposed project (including private balconies, decks, and patios) in square feet: 602,130

Will the project be constructed in phases? YES ___ NO X

Is a density bonus being requested? YES ___ NO X

[1] If the calculation of the number of Inclusionary Units required results in a fraction less than .5, the developer has the option to (i) provide an additional full Inclusionary Unit or (ii) pay an In-Lieu Fee equal to the percentage represented by the fractional Inclusionary Unit multiplied by the applicable In-Lieu Fee.

III. Fractional Inclusionary Unit Obligation

For Projects that choose to pay an in-lieu fee to fulfill a fractional Inclusionary Unit obligation, calculate the fractional in-lieu fee obligation in the following table:

Fractional In-Lieu Fee Calculation	
Fractional Unit Obligation	N/A
Total Habitable Area (Square Feet)	N/A
In-Lieu Fee Per Square Foot of Habitable Area (See Section IV of this application)	N/A
Total Fractional In-Lieu Fee	N/A

In-Lieu Fee Payment to Fulfill the Entire Inclusionary Housing Obligation

The in-lieu fee payment obligation is calculated against the entire Habitable Area of the proposed Market Rate Project. The in-lieu fee schedule is presented in the following table:

# of Units	Fee Per Square Foot
10	$1.52
11	$3.05
12	$4.57
13	$6.09
14	$7.62
15	$9.14
16	$10.66

17	$12.18
18	$13.71
19	$15.23
20	$16.75
21	$18.28
22	$19.80

IV. REQUIRED EXHIBITS TO THE INCLUSIONARY HOUSING PLAN

A. A narrative description of the entire project;

B. A site plan that depicts the entire project detailing location of the Inclusionary Units, if applicable;

C. Legal description of the project; and

D. If applicable, a phasing plan that provides for the timely development of the Inclusionary Units as the project is built out; and

E. Application fee.

V. PROPERTY OWNER'S AFFIDAVIT

I hereby certify that I am the legally authorized owner of all property involved in this application or have been empowered to sign as the property owner on behalf of a corporation, partnership, business, etc., as evidenced by separate instrument attached herewith. I hereby grant to the applicant submitting this form full power to sign all documents related to this application, including any conditions or litigation measures as may be deemed necessary.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on (Date) 1/10/24 at San Marino, California

Property Owner's Signature _____

Printed Name Dongliang Zhang

VI. APPLICANT'S AFFIDAVIT

I hereby certify that the statements furnished above and in the attached exhibits represent the data and information required for this initial evaluation and that the facts, statements and information presented are true and correct to the best of my knowledge and belief. Further, should the stated information be found false or insufficient, I agree to the return of this form for appropriate revisions, understanding the City of Claremont cannot process this form until all applicable information is corrected or provided by the applicant. I herby certify that I have been legally authorized by the property owner to present this application and to sign on behalf of all documents related to this application, including any conditions or litigation measures as may be deemed necessary.

Note: When the applicant is a corporation, partnership, business, etc., a separate document verifying the authorization to sign for such applicant is required.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on (Date) 1/10/24 at San Marino, California

Applicant's Signature _____

Applicant's Printed Name Dongliang Zhang



INCLUSIONARY HOUSING

Inclusionary Requirements

Project Units	5% Very Low Income
Inclusionary Calculation	
Single Family	5% x 18 = .9 Units
Townhome	5% x 72 = 3.6 Units
Apartment	5% x 451 = 22.5 Units
Total	**27.1 Units**
Proposed	**28 Very Low Income units to be provided in the Apartment neighborhood**

Inclusionary Unit Breakdown

Studio	2
1 BDRM	12
2 BDRM	14
Total	**28**

1"=50'-0" 0 25' 50' 100' 150'

NORTH

SCALE = 1:50
DATE: 01-16-2024
JOB NO.: 2021-046

APN: 0167-171-04-0000
0167-171-05-0000
0167-171-06-0000

THE NEIGHBORHOODS AT LUGONIA VILLAGE

REDLANDS, CA

INCLUSIONARY HOUSING

G-1.1

REDLANDS SUMMIT LLC
2459 HUNTINGTON DR., SAN MARINO, CA 91108
(626) 360-2888

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:
City Clerk
City of Redlands
P. O. Box 3005
Redlands, CA 92373

SPACE ABOVE LINE FOR RECORDER'S USE ONLY
EXEMPT FROM RECORDING FEES (GOVT. CODE § 27383)
NO DOCUMENTARY TRANSFER TAX (R&T CODE § 11922)

APN: 0167-171-04-0000, 0167-171-05-0000, AND 0167-171-06-0000

CITY OF REDLANDS

AFFORDABLE HOUSING COVENANT AND REGULATORY AGREEMENT (DENSITY BONUS & INCLUSIONARY HOUSING FOR LUGONIA VILLAGE)

This Affordable Housing Covenant and Regulatory Agreement ("Agreement") is entered into as of this ___ day of _____, 2024, by and between the City of Redlands, a California municipal corporation ("City"), and Redlands Summit, LLC, a California limited liability company ("Developer"). City and Developer are each sometimes individually referred to herein as a "Party" and, together, as the "Parties."

RECITALS

A. Developer is the owner of approximately 24.24 acres of real property, comprising of four separate parcels located at the northwest corner of West Lugonia Avenue and Karon Street (APNs: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000), in Redlands, California, which is more particularly described in the legal description attached hereto as Exhibit "A" and incorporated herein by reference ("Property").

B. Developer is constructing a multi-family residential housing project on the Property, comprising of four hundred fifty-one (451) apartment units ("Apartment Units"), seventy-two (72) townhome units ("Townhome Units"), and eighteen (18) single family residences ("SFR Units"), for a total of five hundred forty-one (541) residential units (the "Project"), as more particularly described in the following Application Numbers: General Plan Amendment No. 143, Zone Change No. 469, Specific Plan No. 40 Amendment No. 48, Tentative Tract Map Nos. 20490 and 20491, Tentative Parcel Map No. 20469, and Commission Review and Approval Nos. 940 and 941 (collectively, the "Project Applications").

C. In connection with the Project, Developer proposes to restrict a total of five percent (5%) of the total units in the Project to Very Low Income Households for an Affordable Rent to be eligible for the benefits of this Agreement, as further specified herein.

D. Provided that Developer complies with all of the requirements of the California Density Bonus Law (Government Code Section 65915, *et seq.*), and Chapter 18.228 of the Redlands Municipal Code, Developer is eligible to obtain a density bonus, incentives and concessions, or waivers, as authorized by law. Accordingly, City desires to enter into this Agreement in accordance with California law and the Redlands Municipal Code.

E. The requirements of this Agreement are also intended to satisfy the requirements of the Inclusionary Housing Ordinance in Chapter 18.230 of the Redlands Municipal Code. Developer agrees and understands that the affordability covenants set forth in this Agreement shall be enforceable under the Density Bonus Law and the Inclusionary Housing Ordinance, and that the terms and conditions set forth in this Agreement are subject to compliance with the Density Bonus Law and the Inclusionary Housing Ordinance.

F. For purposes of complying with the Density Bonus Law, and the Redlands Municipal Code, and facilitating development of affordable housing within the City, City agrees to the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual promises contained herein, the Parties agree as follows:

AGREEMENT

1. Recitals. The foregoing recitals are true and correct, and are incorporated herein as a substantive part of this Agreement.

2. Definitions. The following terms when used in this Agreement shall have the meanings ascribed to them:

(a) "**Adjusted for family size appropriate to the unit**" shall have the meaning set forth by Health and Safety Code Section 50052.5(h).

(b) "**Affordable Rent**" means the maximum Monthly Rent that may be charged to and paid by an Eligible Household for the Affordable Units, as required by the terms of this Agreement, and which shall not exceed the amount of Affordable Rent authorized by California Health and Safety Code Section 50053 and pursuant to implementing regulations published by the California Department of Housing and Community Development, as determined from the Median Income for San Bernardino, as defined below. The Affordable Rent shall include a reasonable utility allowance for utilities paid by the household, which shall be updated no less than annually, based on the amount published by the Housing Authority for the County of San Bernardino for the applicable year.

(c) "**Affordable Unit**" means a unit restricted for occupancy by a Qualifying Household at an Affordable Rent.

(d) "**Density Bonus Law**" means California Government Code section 65915, *et seq.*

(e) **"Household"** means all persons residing in a Unit.

(f) "**Inclusionary Housing Ordinance**" means Redlands Municipal Code Chapter 18.230.

(g) **"Median Income"** means the San Bernardino County, California area median income, adjusted for family size appropriate to the unit pursuant to California Health and Safety Code Section 50052.5(h), as periodically published by California Department of Housing and Community Development .

(h) **"Monthly Rent"** means the total of monthly payments for: (a) use and occupancy of each Affordable Unit and land and facilities associated therewith; (b) any separately charged fees or service charges assessed by Developer which are required of all tenants, other than security deposits, application fees or credit check fees; (c) a reasonable allowance for an adequate level of service of utilities not included in (a) or (b) above, including garbage collection, sewer, water, electricity, gas and other heating, cooking and refrigeration fuels, but not including telephone or cable service, to the extent applicable and charged to tenant; and, (d) possessory interest, taxes or other fees or charges assessed for use of the land and facilities associated therewith by a public or private entity other than Developer. In the event that certain utility charges are paid by the landlord rather than the tenant, no utility allowance shall be deducted from the rent for that type of utility charge.

(i) **"Project"** means that certain affordable residential development as more particularly described in Recital B and Section 2 of this Agreement.

(j) "**Qualifying Household**" means a household whose income does not exceed the maximum income allowable for a Very Low Income Household.

(k) "**Site Plan**" shall mean the drawings, maps, and depictions set forth in Exhibit B, and approved by the City, which is attached hereto and incorporated herein by reference. The Site Plan shall conform to the Inclusionary Housing Plan submitted by Developer as required under the Inclusionary Housing Ordinance.

(l) "**Very-Low Income Household**" means a household with income that does not exceed fifty percent (50%) of the area median income for the City of Redlands, adjusted for family size appropriate for the unit, as may be updated by the State of California in accordance with California Health and Safety Code Section 50105.

3. Affordable Housing Requirements.

(a) Project. Developer shall develop, or cause to be developed, the Affordable Units allowed by the Density Bonus in accordance with the approvals of the Project Applications (the "Entitlements") and this Agreement.

(b) Affordable Units. Developer covenants and agrees that it shall rent not less than twenty-eight (28) units from the Apartment Units in the Project as Affordable Units. The rental restrictions and conditions described in this Agreement shall run with the land and shall be binding on all successor owners of the Property. City is given the express authority by Developer to enforce the restrictions and conditions described in this Agreement. Except as provided herein, the Affordable Units shall be rented, marketed, managed, maintained, and treated in the same manner as all other units on the Property.

(c) Affordable Rent. The Affordable Units shall be rented exclusively to Qualifying Households at a Monthly Rent that does not exceed Affordable Rent for a Qualifying Household. Affordable Rent, determined on a monthly basis, shall not exceed one-twelfth (1/12) of thirty percent (30%) of fifty percent (50%) of the Median Income for the County of San Bernardino, as published in Title 25, California Code of Regulations, Section 6932 by the California Department of Housing and Community Development, as may be amended from time to time ("Affordable Rent"). The Affordable Rent shall be adjusted for family size appropriate for the unit in accordance with California Health and Safety Code Section 50052.5. Affordable Rent may not be increased more frequently than annually to reflect increases in area median income.

(d) Minimum Development Standards For Affordable Units. The Affordable Units shall be constructed with the same exterior appearance and interior features, fixtures, and amenities, and shall use the same type and quality of materials as provided for the other units in the Project.

(e) Designation of Affordable Units. The Affordable Units shall be reasonably disbursed throughout the Property. The Affordable Units shall be reasonably disbursed throughout the entire Project. The Site Plan shall include a list of designated Affordable Units, which shall be subject to modification only upon written consent from the City. Any request to designate Affordable Units on a floating basis shall be subject to review and approval of City, which shall not be unreasonably withheld.

(f) Unit Mix for Affordable Units. The Affordable Units shall comprise of the following minimum number of Apartment Units:

Unit Type	Quantity of Affordable Units
Studio	2
1 Bedroom	12
2 Bedroom	14

(g) Determination of Household Income.

(i) Developer shall determine whether a prospective tenant is a Qualifying Household for an Affordable Unit by requiring the household complete a form that verifies the income of the household ("Income Certification Form").

(ii) The Income Certification Form shall be certified or recertified as follows: (A) at the initial application for occupancy, (B) at least once every twelve (12) months during the Term, and (C) each renewal of a lease for an Affordable Unit.

(h) Verification. Developer shall make a good faith effort to verify the accuracy of income information provided in any Income Certification Form to verify an applicant or existing occupant is a Qualifying Household in accordance with California law, and taking one or more of the following steps, as reasonably required or indicated.

(i) Obtain an income tax return and copy of each W-2 Wage and Earnings Statement for the most recently concluded income tax year;

(ii) Contact a credit reporting agency or conduct a similar search;

(iii) Obtain an income verification form from current employer(s) of the applicant(s) or existing tenant(s);

(iv) Obtain an income verification form from the United States Social Security Administration or the California Department of Social Services, if the applicant(s) or existing tenant(s) receive assistance from either of such agencies; or

(v) If the applicant or existing tenant is an adult who is unemployed and has no such income tax return, obtain another form of independent verification.

(i) Evidence. All verification information shall only be obtained by Developer after obtaining written consent from the applicant or existing tenant for the release of such information to Developer. Failure to consent in writing to the release of such income

verification information to Developer may disqualify an individual for occupancy of an Affordable Unit or be grounds for termination of a tenancy in an Affordable Unit.

(j) Tenant Selection Policies and Criteria. The Developer shall adopt written tenant selection policies and criteria applicable to the Affordable Unit that:

(i) are consistent with the purpose of providing affordable rental housing for Qualifying Households at an Affordable Rent;

(ii) are reasonably related to tenant eligibility and ability to perform the obligations of the lease for an Affordable Unit;

(iii) provide for the selection of tenants from a written waiting list in the chronological order of their application, insofar as is practicable;

(iv) give prompt written notice to any rejected applicant of the grounds for rejection;

(v) provide for all of the Affordable Units to be available for occupancy on a continuous basis to Qualifying Households;

(vi) do not give preference to any particular class or group of persons in leasing or renting the Affordable Unit except to the extent that a tenant must be a Qualifying Household; and

(vii) provide for notice to the City when a vacancy arises in an Affordable Unit.

The tenant selection policies and criteria prepared in accordance with this Section shall be set forth in the Management Plan required under this Agreement.

(k) Changes in Household Income. A tenant who initially qualified as a Very Low Income Household, but whose income subsequently exceeds the initially qualifying income limit for a Very Low Income Household shall continue to be considered a Qualifying Household provided that (A) any vacant residential unit in the Project of comparable or smaller size is rented to a qualifying Very Low Income Household and (B) such over-income tenant shall not be required to pay rent that exceeds an amount that is the least of the amount that would be payable by the tenant under (i) low income housing tax credit regulations, (ii) State or local law or (iii) thirty percent (30%) of the household's adjusted gross income.

(l) Prohibition Against Discrimination. Developer shall not discriminate against any tenant or potential tenant on the basis of sex, color, race, religion, ancestry, national origin, age, pregnancy, marital status, family composition, sexual orientation, source of income, or the potential or actual occupancy of minor children. Developer further

agrees to take affirmative action to ensure that no such person is discriminated against for any of the above-mentioned reasons.

(m) Management Plan. Developer shall prepare a management plan for the Affordable Units that provides for the implementation of the requirements in this Agreement, including but not limited to the marketing of the Affordable Units, tenant selection criteria and process, waiting list management, verification of income, setting utility allowances for Affordable Rent, and any other matter related to management of the Affordable Units ("Management Plan"). The Management Plan shall be submitted to the City Manager, or its designee, not less than thirty (30) days prior to a request for a Certificate of Occupancy. The City Manager, or designee, shall have thirty (30) days to approve the Management Plan, which approval shall not be unreasonably withheld.

(n) Annual Report. On or before the annual anniversary of the recording of this Agreement, and the same date each year thereafter, Developer shall provide the City with an annual report that sets forth the number of Affordable Units that are rented or vacant, the dates of any vacancies and new leases by each Affordable Unit, certification of compliance with all requirements to verify income for Qualifying Households, and any other information reasonably required by the City to ensure compliance with this Agreement.

4. Developer Covenant Regarding Lease of Affordable Units. Developer, for itself, its successors, assignees and affiliates, covenants and agrees that, if any Affordable Unit is rented or leased during the Term, the rental or lease of the Affordable Unit shall be accomplished through a written lease agreement and all of the following restrictions shall apply:

(i) Developer shall provide a legible copy of this Agreement to each prospective tenant of any Affordable Unit, prior to entering into a lease with such tenant.

(ii) The lease for each Affordable Unit shall expressly state that the lease is subject and subordinate to this Agreement and shall incorporate each and every provision of this Agreement, either expressly or by reference.

(iii) Developer shall not lease an Affordable Unit to any occupant with any family relationship to Developer or who owns, directly or indirectly, any interest in the ownership. For purposes of this section, indirect ownership by an individual shall mean ownership by a family member, ownership by a corporation, partnership, estate or trust in proportion to the ownership or beneficial interest in such corporation, partnership, estate or trust held by the individual or a family member, and ownership, direct or indirect, by a partner of the individual.

(iv) Developer shall: (a) maintain and operate all units on the Property so as to provide decent, safe and sanitary housing consistent with federal housing quality standards and the Redlands Municipal Code; (b) make any required repairs or provide any

required cleanup; and (c) provide the Affordable Units with the same levels of services and maintenance as are provided to any of the other dwelling units on the Property.

(v) A tenant occupying an Affordable Unit may not sublet the unit without the written permission of both Developer and City. The City shall not grant permission to lease, rent, or sublet the Affordable Unit if it finds that the prospective tenant or occupant is not a Qualifying Household. Any individual who subleases an Affordable Unit in violation of the provisions of this Agreement shall be required to forfeit to City all monetary amounts so obtained.

5. Density Bonus; Concessions; Waivers; Parking. In exchange for the agreement to the construct the Affordable Units on the terms and conditions set forth herein, and subject to the requirements of the Density Bonus Law, the City has agreed to the following:

(a) Density Bonus. The Project may have a total of five hundred forty-one (541) units. The Apartment Units and Townhome Units may be constructed at a density of 27.2 dwelling units per acre, which is in excess of the maximum allowable density of 27 dwelling units per acre. As a result, the Project may have four hundred fifty-one (451) Apartment Units, seventy-two (72) Townhome Units, and eighteen (18) SFR Units, as identified in the Project Applications.

(b) Concession. The City grants a concession relieving the Project from the requirement for landscaped island for parking spaces under Redlands Municipal Code Section 18.168.210(A)(13).

(c) Waivers. The City grants the following waivers to the extent they would preclude development of the Project at the density allowed under this Agreement:

(i) The Townhome Units are granted waivers as follows:

(A) The Townhome Units may utilize a minimum building separation of ten feet (10'). This is a waiver of requirements in Redlands Municipal Code Section 18.60.160(A).

(B) The Townhome Units may have a setback of ten feet (10') throughout the Project. This is a waiver of Redlands Municipal Code Section 18.60.160(A)(3), which requires that, for buildings placed at an angle with each other, each yard standard may be reduced up to ten feet (10'), provided that the average required space between buildings is maintained, except that main buildings shall be no closer than twenty feet (20') at the closest point.

(C) The Townhome Units are not required to have increased setbacks required under Redlands Municipal Code Section 18.60.160(B), provided the Townhome Units comply with all other setback requirements.

(D) An accessory building (the pool house) may be located no less than ten feet (10') from a main building, and the front yard of main buildings are provided a minimum setback from garages of thirty feet (30'). This is a waiver of requirements in Redlands Municipal Code Section 18.60.160(C) that require the distance between buildings or wings shall not be less than the sum of the yard requirements for each building or wing; main buildings shall in no instance be closer than ten feet (10'); and, main buildings and accessory buildings shall in no instance be closer than fifteen feet (15'), except that the front yard of any main building facing a garage or carport shall be a minimum of forty feet (40').

(ii) The Apartment Units are granted a waiver from Redlands Municipal Code Section 18.60.190, which requires a setback of five feet (5') for a one story accessory structure. Under this waiver, carports located adjacent to the rear property line may have a reduced setback to approximately two feet (2').

(d) Parking Allowance Pursuant to Density Bonus Law. The Project shall comply with the parking requirements for the Apartment Units set forth in the Density Bonus Law, including the use of uncovered parking. The Project shall provide parking spaces in accordance with the following ratios:

Unit Type	**Number of Units**	**Ratio of Parking/# of Units**	**Quantity of Parking**
Studio	21	1.0	21
1 Bedroom	200	1.0	200
2 Bedroom	230	1.5	345
Total	451	1.25	566

6. Permits and Processing; Compliance with Laws.

(a) Developer, at its sole cost and expense, shall secure or cause to be secured any and all permits that may be required by City or any other federal, state, or local government entity having or claiming jurisdiction over the Property or Project. Upon securing any and all permits, Developer shall carry out and perform the development, construction,

management, maintenance and rental of the Project in conformity with all applicable federal, state, and local laws and regulations, and all conditions of approval issued for the Project.

(b) City shall have no responsibility for the construction, installation, management, operation or maintenance of the Project.

(c) Developer acknowledges and understands that, except as specifically provided for herein, this Agreement shall not constitute an amendment, modification, enlargement or other change to the Entitlements. Developer shall be obligated and solely responsible for applying for, obtaining, and complying with any further approvals or permits necessary.

(d) Nothing contained in this Agreement shall require Developer or City to do anything contrary to or refrain from doing anything required by federal or state law, or regulations promulgated thereunder, which are applicable to the construction, management, maintenance, and rental of the Affordable Units and the Project.

(e) Developer agrees that this Agreement requires compliance with the Density Bonus Law and the Inclusionary Housing Ordinance. Unless specifically prohibited by law, in the event of a conflict between the Density Bonus Law and the Inclusionary Housing Ordinance, the provisions which require a lower amount of Affordable Rent or additional protections for renters of Affordable Units shall apply.

7. No Further Incentives, Concessions, or Waivers. Developer acknowledges and agrees that no other incentives, concessions, waivers or other request has been made or is required by the City in connection with the request for a Density Bonus, and that City has fully satisfied any duty the City may have under the Redlands Municipal Code, the Density Bonus Law, or any other law or regulation applicable to the Project, to provide any development incentive, concession, or waiver as it relates to the Project, including the waiver or reduction of any building, zoning, or other requirement. By this Agreement, Developer releases any and all claims Developer may have against the City related to or arising from, in any way, City's obligation to waive requirements of or provide development incentives or concessions pursuant to any state, federal, or local law, rule, or regulation applicable to the Project.

8. Term. The Term of this Agreement shall be fifty-five (55) years commencing upon the date of the City's issuance of the first certificate of occupancy for the Project.

9. Agreement to be Recorded; Priority. This Agreement shall be recorded in the Official Records of San Bernardino County, California as senior, non-subordinate covenants and as an encumbrance running with the land for the full Term of this Agreement, within thirty (30) days of approval, and prior to issuance of a building permit for the Project. In no event shall this Agreement be made junior or subordinate to any deed of trust or other document providing financing for the construction or operation of the Project or any other lien or encumbrance

whatsoever for the entire fifty-five (55) year Term of this Agreement. Notwithstanding anything to the contrary herein, the City shall have the discretion to subordinate this Agreement to regulatory restrictions of public lender(s) restricting occupancy of units in the Project to affordable housing covenants agreeable to the City. Upon a determination by the City Manager that the conditions in this Section have been satisfied, the City Manager or the City Manager's designee will be authorized to execute the approved subordination agreement without the necessity of any further action or approval by the City Council.

10. Liquidated Damages. Developer acknowledges that the City is implementing the goals objectives and policies of the City's General Plan Housing Element, and that City has granted an incentive and/or concession to Developer in recognition of Developer's agreement to provide the Affordable Units as set forth in this Agreement. If Developer does not rent the units as Affordable Units in accordance with the provisions of this Agreement, Developer shall be in default of this Agreement and the City will suffer damages. However, it is extremely difficult and impractical to ascertain the extent of the damages to City, therefore, in addition to any other legal or equitable remedies, the City may have, Developer and the City agree that if the Affordable Units in the Project are not rented with Affordable Rents in accordance with the provisions of this Agreement, as liquidated damages, the City shall be entitled to recover from Developer the amount of any rents received by Developer from any units in excess of the limits of Affordable Rent. This liquidated damages provision relates solely and exclusively to a breach of this Agreement arising from renting the Affordable Units on terms that exceed the limits of Affordable Rent.

11. Indemnification. Developer shall defend, indemnify and hold harmless the City and its officers, agents, employees, representatives, and volunteers (collectively, "Indemnitees") from and against any loss, liability, claim or judgment relating in any manner to this Agreement. Developer shall not be required to indemnify and hold harmless Indemnitees for liability attributable to the active negligence or willful misconduct of Indemnitees, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction. In instances where an Indemnitee is shown to have been actively negligent and where Indemnitees' active negligence accounts for only a percentage of the liability involved, the obligation of Developer will be for that entire portion or percentage of liability not attributable to the active negligence of Indemnitees.

12. City's Right to Inspect Affordable Units and Documents. The City may inspect the Affordable Units at any reasonable time for so long as this Agreement remains in effect, to determine Developer's compliance with this Agreement.

13. Defaults and Remedies. The City shall have the right to specifically enforce each and every covenant, condition, restriction, and provision in this Agreement and Developer hereby agrees and acknowledges that money damages are an inadequate remedy for any default under this Agreement.

(a) Default. A party shall be in default of this Agreement if it breaches any term or provision of this Agreement, and fails to correct the violation within thirty (30) days after receipt of notice from the other party; provided, however, if a longer period to cure the violation is reasonably necessary, and the party in breach of the Agreement is diligently pursuing a cure, then it shall have a reasonable time necessary to cure the breach, but not to exceed ninety (90) days.

(b) Remedies. Upon a default of this Agreement, City may institute any appropriate legal actions or proceedings necessary to enforce this Agreement, including but not limited to actions for injunctive relief or damages. The remedies allowed under this Agreement include enforcement of all requirements of Developer to comply with the Redlands Municipal Code, and any and all remedies allowed under the Redlands Municipal Code for violations of its provisions.

14. Waiver. Failure by a Party to insist upon the strict performance of any of the provisions of this Agreement by the other Party, or the failure by a Party to exercise its rights upon the default of the other Party, shall not constitute a waiver of such Party's right to insist and demand strict compliance by the other Party with the terms of this Agreement thereafter.

15. Attorney's Fees. In the event any action is commenced to enforce or interpret the terms or conditions of this Agreement, the prevailing Party shall, in addition to any costs and other relief, be entitled to the recovery of its reasonable attorney's fees, including fees for use of in-house counsel by a Party.

16. Time. Time is of the essence in this Agreement.

17. Notices. Any approval, disapproval, demand, document or other notice ("Notice") which either Party may desire to give to the other Party under this Agreement must be in writing and may be given either by (i) personal service, (ii) delivery by reputable document delivery service such as Federal Express that provides a receipt showing date and time of delivery, or (iii) mailing in the United States mail, certified mail, postage prepaid, return receipt requested, addressed to the address of the party as set forth below, or at any other address as that party may later designate by Notice:

Developer: Redlands Summit, LLC
2459 Huntington Drive
San Marino, California 91108

City: City of Redlands
35 Cajon Street
Redlands, California 92373
Attention: City Clerk

Such addresses may be changed by notice to the other party given in the same manner as provided above.

18. Third Party Beneficiaries. The Parties acknowledge and agree there are no third party beneficiaries of this Agreement. Agency shall have full right and ability to enforce each and every covenant and restriction in this Agreement. No other person or entities shall have any right of action hereunder.

19. Successors and Assigns. This Agreement shall run with the land, and all of the terms, covenants and conditions of this Agreement shall be binding upon Developer and City and the permitted successors and assigns of Developer and City. Whenever the terms "Developer" or "City" are used in this Agreement, such terms shall include any other successors and assigns as herein provided.

20. Project as Private Undertaking. It is specifically understood and agreed by and between the Parties hereto that the development of the Project is a private development, that neither Party is acting as the agent of the other in any respect hereunder, and that each Party is an independent contracting entity with respect to the terms, covenants, and conditions contained in this Agreement. No partnership, joint venture, or other association of any kind is formed by this Agreement. The only relationship between City and Developer is that of a government entity regulating the development of private property and the Developer of such property.

21. Entire Agreement. This Agreement and all of its Exhibits set forth and contain the entire understanding and agreement of the Parties, and there are no oral or written representations, understandings or ancillary covenants, undertakings, or agreements which are not contained or expressly referred to herein. No testimony or evidence of an such representations, understandings, or covenants shall be admissible in any proceedings of any kind or nature to interpret or determine the terms or conditions of this Agreement.

22. Partial Invalidity. If any provision of this Agreement shall be declared invalid, illegal, or unenforceable, the validity, legality, and enforceability of the remaining provisions hereof shall not in any way be affected or impaired.

23. Interpretation and Governing Law. This Agreement shall be construed as a whole according to its fair language and common meaning to achieve the objectives and purpose of the Parties hereto, and the rule of construction that ambiguities are to be resolved against the drafting party shall not be employed in interpreting this Agreement. This Agreement and any dispute arising hereunder shall be governed and interpreted in accordance with the laws of the State of California.

24. Amendment. This Agreement may not be changed orally, but only by an agreement in writing signed by Developer and City. The City Manager, or the City Manager's designee, may execute an amendment to this Agreement that is necessary to implement the provisions stated herein; provided, however, that any relating to the term, number or percentage or type of Affordable Units, any of the income or rental restrictions under this Agreement, or the

number or type of any incentives or concessions given by the City, must be approved by the City Council.

25. Counterparts. This Agreement may be executed in two or more separate counterparts, each of which, when so executed, shall be deemed to be an original. Such counterparts shall, together, constitute and shall be one and the same instrument. This Agreement shall not be effective until the execution and delivery by the Parties of at least one set of counterparts. The Parties hereunder authorize each other to detach and combine original signature pages and consolidate them into a single identical original. Any one of such completely executed counterparts shall be sufficient proof of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first set forth above.

DEVELOPER:

Redlands Summit, LLC, a California limited liability company

By: _____

Its: President

THE CITY OF REDLANDS, a California municipal corporation

By: _____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

EXHIBIT A

DESCRIPTION OF SUBJECT PROPERTY

REAL PROPERTY IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL 1 (APN: 0167-171-04-0-000)

THAT PORTION OF THE NORTHEAST 1/2 OF SECTION 21 TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

COMMENCING 60 RODS WEST OF THE SOUTHEAST CORNER OF THE NORTH 1/2 OF SAID SECTION 21; THENCE NORTH 80 RODS; THENCE WEST 20 RODS; THENCE SOUTH 80 RODS; THENCE EAST 20 RODS TO THE POINT OF BEGINNING.

PARCEL 2 (APN: 0167-171-05-0-000)

THE EAST 7 1/2 ACRES OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST OF THE SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE GOVERNMENTAL SURVEY, EXCEPTING ANY PORTION WITHIN LUGONIA AVENUE.

PARCEL 3 (APN: 0167-171-06-0-000)

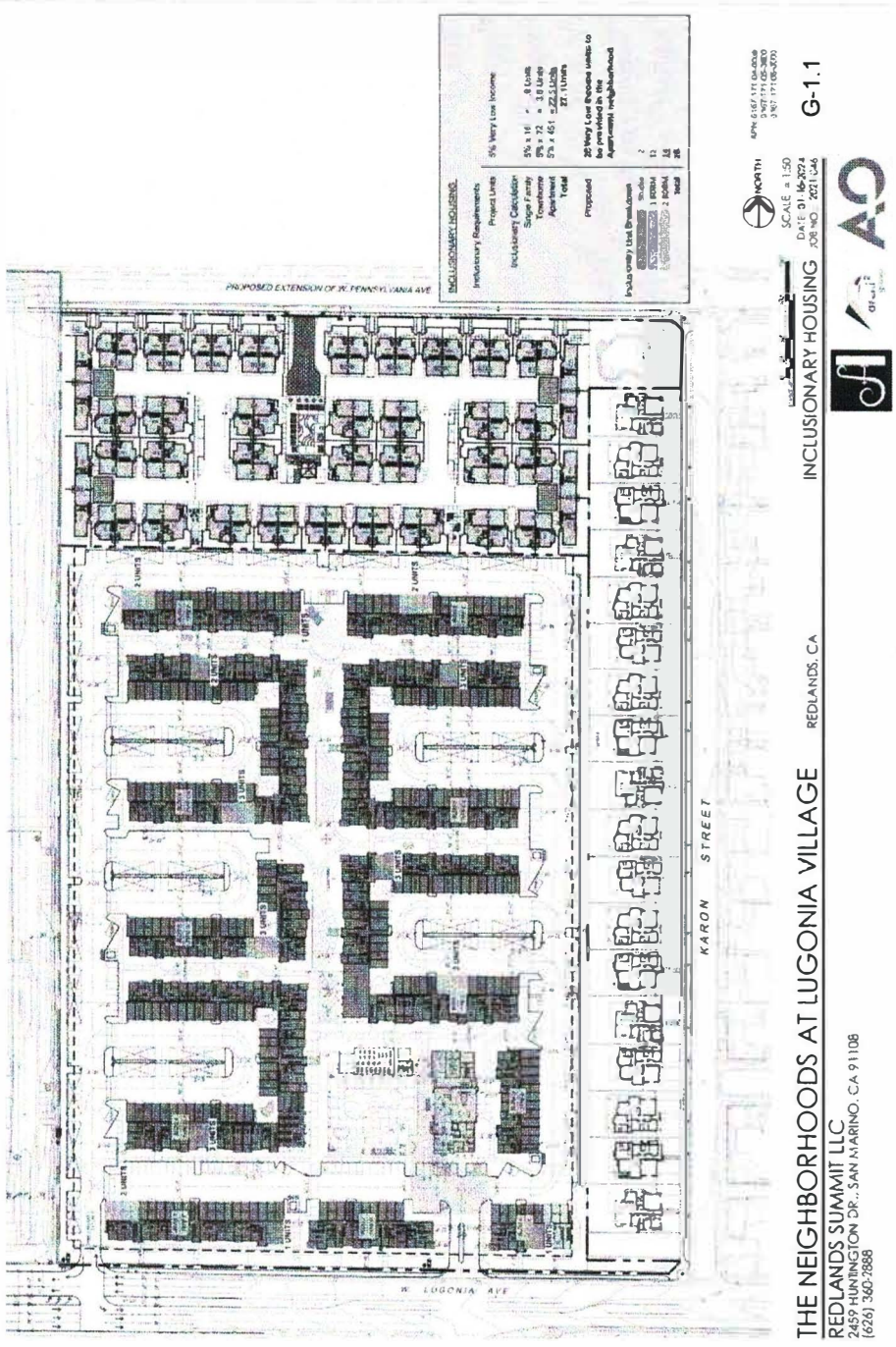
THE WEST 1/2 OF THE EAST 15 ACRES OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION, 95 RODS WEST OF THE SOUTHEAST CORNER OF SAID 1/4 SECTION; THENCE NORTH 80 RODS; THENCE WEST 15 RODS; THENCE SOUTH 80 RODS; THENCE EAST 15 RODS TO THE BEGINNING.

EXCEPTING THE SOUTH 30 FEET FOR ROAD PURPOSES.

EXHIBIT B

SITE PLAN



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ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of LOS ANGELES)

On 02/26/2024 before me, YUKO LIN (NOTARY PUBLIC)
(insert name and title of the officer)

personally appeared Dongliang Zhang
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

YUKO LIN
COMM. #2426492
Notary Public - California
Los Angeles County
My Comm. Expires Nov. 20, 2026

Signature _____ (Seal)

SOCIOECONOMIC EVALUATION CHECKLIST FORM

I. BACKGROUND

1. **Project Title:** Lugonia Village

2. **Contact Person and Phone Number:**
Ryan Murphy, Senior Planner
Development Services Department, 35 Cajon St., Suite 20, Redlands, CA 92373
Telephone: (909) 798 – 7555 x 7308

3. **Project Location:** Redlands Mall site consisting of 11.15 acres located at the southwest corner of Redlands Boulevard and Orange Street (APNs: 0171-053-01-0000, 0171-053-02-0000, 0171-053-03-0000, 0171-053-04-0000, 0171-053-05-0000, 0171-053-06-0000), and approximately 1.1 acre located at the southeast corner of Citrus Avenue and Eureka Street (APNs: 0171-251-06-0000, 0171-251-07-0000, 0171-251-08-0000, 0171-251-09-0000, 0171-251-10-0000)

4. **Project Sponsor's Name and Address:**
Redlands Summit, LLC
2459 Huntington Drive, San Marino, CA 91108

5. **General Plan Designation:** Commercial, Parks/Golf Courses, Low Density Residential. A General Plan Amendment was filed to change the land use designation to High Density Residential.

6. **Zoning:** East Valley Corridor Specific Plan/Special Development District. A Zone Change was filed to change the zoning district to R-1 (Single Family Residential) and R-3 (Multiple Family Residential).

7. **Description of Project:** The proposed Project includes the subdivision of the Project site into three parcels in order ton facilitate the development of an apartment complex neighborhood, a townhome neighborhood (collectively, the apartment complex and townhomes are referred to as Neighborhood A), and a neighborhood of single- family detached homes (Neighborhood B) on the Project site. The detached single-family homes would be located on Parcel 1, the townhomes neighborhood would be located on Parcel 2, and the apartment complex neighborhood would be located on Parcel 3.

   The proposed Project also includes the approval of a Tentative Tract Map for the 18 single-family residential parcels along Karon Street as well as a neighborhood park at the southwest corner of Pennsylvania Avenue and Karon Street.

   The proposed Project includes the construction of 451 apartment units, 72 townhome units, and 18 single family residences, for a total of 541 residential units. Of the 451 apartment units, 28 would be very low-income units. The remaining apartment, townhome, and single-family residential units are expected to be sold at market rate (the above-moderate income level). The apartment complex and townhome neighborhood would have a proposed density of 27.2 dwelling units per acre (du/ac), and the neighborhood or single-family dwellings would have a proposed density of 5.33 du/ac. The proposed Project would also include a small parklet at the northeastern corner of the Project site.

The proposal includes an extension of Pennsylvania Avenue westerly of Karon Street to establish a connection to Tennessee Street. This will provide access to the townhome neighborhood that fronts result in smaller blocks with shorter block lengths more amenable to pedestrian traffic (similar to the existing historical blocks along East State Street), and should also result in slowing motor vehicle traffic through the site. The proposed buildings and other site design elements will be in substantial conformance with the design goals of the draft Transit Villages Specific Plan, and the project plans were prepared by an architectural firm very experienced with implementing form-based codes and transit-oriented development.

Entitlements will include:

- *General Plan Amendment No. 143* to amend the General Plan Designation of approximately 17.9 acres from Commercial to High Density Residential (up to 27 units per acre) and amend the General Plan Designation of approximately one acre from Public and Open Space to High Density Residential (up to 27 units per acre);
- *Specific Plan Amendment No. 40 Amendment No. 48* to amend the East Valley Corridor Specific Plan (Special Plan No. 40) to remove the 24.4 acre project site from the boundaries of Specific Plan area;
- *Zone Change No. 469* to change the zoning designation of the 24.4 gross acre project site from EV/SD (Special Development) District of the East Valley Corridor Specific Plan to 18.89 gross acres of R-3 (High Density Residential) District, and change the zoning designation of 5.51 gross acres to R-1 (Single Family Residential) District;
- *Commission Review and Approval No. 940* for site plan approval and architectural design review to construct a total of 18 single family homes, ranging in size from 1,520 sq. ft. to 1,690 sq. ft., fronting Karon Street;
- *Commission Review and Approval No. 941* for site plan approval and architectural design review to construct a 451-unit multi-family apartment complex fronting Lugonia Avenue. The residential units include studio, one-bedroom, and two-bedroom floor plans that range from 561 sq. ft. to 1,125 sq. ft. each, including onsite parking and recreation areas, with access provided via two driveways on Lugonia Avenue;
- *Commission Review and Approval No. 942* for site plan approval and architectural design review to construct a 72-unit townhouse development fronting Pennsylvania Avenue, including onsite parking and recreation areas, with access provided via one driveway on Pennsylvania Avenue;
- *Tentative Parcel Map No. 20469* to subdivide the entire project site into three parcels, 3.38 net acres, 4.75 net acres, and 14.48 net acres in size for development purposes;
- *Tentative Tract Map No. 20490* to subdivide 3.47 net acres into 20 lots, ranging in size from 5,995 to 10,518 sq. ft., with 18 numbered lots utilized for single family residential development, one lettered lot utilized as a private park, and one lettered lot for stormwater facilities;
- *Tentative Tract Map No. 20491* to subdivide Parcel 1 of Tentative Parcel Map No. 20469 map for condominium purposes, utilized for 72 residential condominium units.
- Related ancillary applications at a later date (e.g., subsequent to construction) such as Commission Sign Review and/or Sign Program.

8. **Surrounding Land Uses and Setting:**
The Project site is bordered by West Lugonia Avenue and retail commercial development to the south, Karon Street and an existing single-family residential community to the east, vacant land to the north, and vacant land to the west followed by Tennessee Street, the 210 freeway, and the Citrus Plaza shopping center in the County of San Bernardino.

II. COST BENEFIT FACTORS:

The cost benefit factors are evaluated independently using the cost benefit model. A positive or negative cost/benefit ratio will be derived by evaluating projects. A complete model used to evaluate the project is available in the Development Services Department. The model is based on valuation assumptions and other data provided by the applicant; and other data regarding public improvements as shown on the proposed project plans. A summary of that analysis is provided here:

According to the cost/benefit model used by the City, upon full buildout, this project will provide the City approximately $578,376.80 in annual revenue and annual costs of $372,710.40. This will result in a positive balance of $205,666.40 annually (or a combined positive cost/benefit ratio of +1.55) over the period for years 2025 through 2034.

Summary of Revenue/Cost Ratios

Category	*Cost / Benefit Ratio*
Annual Residential Revenue/Cost Ratio	1.59
Annual Non-Residential Revenue/Cost Ratio	0.00
Total Annual Revenue/Cost Ratio	1.55

III. PUBLIC INFRASTRUCTURE AND EFFECT ON THE CITY OF REDLANDS:

Identify the public infrastructure required for development of this project and identify the source(s) of funding for these improvements. Identify the effects of such development upon the City of Redlands.

List of public infrastructure required for the project:

The applicant will provide the on- and off-site infrastructure as required by the Municipal Utilities & Engineering Department. As two-thirds of project fronts existing public streets and utility lines along West Lugonia Avenue and Karon Street, most of the project is able to connect to existing utilities.

Intersection improvements are required at New York Street and West Lugonia Avenue to make the intersection a fully improved four-way signalized intersection, with the project entry for the apartment community aligned with New York Street. The two existing traffic signals will be replaced.

Omnitrans has also required that a concrete bus stop and bus landing be constructed on the north side of West Lugonia Avenue, between Karon Street and the New York Street Intersection. These improvements have been made a condition of approval for the project.

In addition, an extension of Pennsylvania Avenue westerly of Karon Street to Tennessee Street is required in order to facilitate the project. This will result in

approximately 0.6 miles of new paved roadway, including a fully improved half-width of roadway on the south of the centerline of the street, inclusive of new curb, gutter and sidewalk, and 10 feet of travel lane with an eight-inch A/C berm north of the centerline of the street. A sewer main extension is also required from the intersection of Karon Street and Pennsylvania Avenue, to Tennessee Street to the west, and a water main is required to be extended from Karon Street along Pennsylvania Avenue to service the townhome community.

Based on the data provided by the applicant's civil engineer, the proposed development will provide the following public improvements and facilities:

- 2 streetlights to be replaced/relocated;
- Approximately 496 linear feet of proposed sewer lines;
- Approximately 824 linear feet of proposed domestic water lines;
- Approximately 13,520 square-feet of landscape;
- 2920 linear feet of new public streets and road lanes;
- 16,756 square-feet of public sidewalks;
- 4 public fire hydrants

The effect of the project upon the City of Redlands relative to public infrastructure:

The proposed project has been evaluated by City staff for the ability to serve the proposed development, and conditions of approval will require the developer to construct all on-site and related off-site improvements to adequately serve the project. The proposed project will not detrimentally impact public infrastructure systems, as studied and determined in the development review process by the Development Review Committee. The proposed improvements will connect to existing infrastructure surrounding the project site (public streets, domestic water, sewer, storm drain, etc.) and upgrade or expand facilities where necessary. The project will construct pedestrian sidewalks within and around the perimeter of the project site. The developer will be the source of funding for all required improvements and will be required to pay all applicable permit and inspection fees, development impact fees (such as water, sewer, and transportation impact fees), and any other applicable charges, etc. In addition, the developer will be required to furnish improvements security as a guarantee of performance.

IV. BENEFITS OF THE PROJECT TO THE CITY OF REDLANDS

The following is a list of benefits that can be attributed to the proposed project. The benefits may fall into the categories identified or a miscellaneous category. Each benefit identified will be described in detail with supporting reasons as to how the item benefits the community.

A. Citrus Enhancements or Preservation. Does the project preserve citrus? The following are accepted ways to enhance or preserve citrus which may be determined to be a benefit to the City of Redlands.

1. Provide conservation easement(s) on citrus groves the City hopes to preserve.
2. Acquire citrus grove(s) and donate all or a portion of the grove to the City.
3. Enhance viability and productivity of existing groves by enhancing

irrigation or adding frost water.
4. Maintain a viable buffer of citrus around the project (at least 3 rows).
5. Other ways to preserve citrus.

If this project provides benefit(s) that apply to citrus enhancement or preservation, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The project will not affect citrus or agriculture, either directly or indirectly. The proposed project site consists of vacant land. The site has a current General Plan land use designation as "Commercial" and has been fallow since approximately 1984, based on historical aerial surveys. The 2035 General Plan encourages infill development, and more specifically within the areas adjacent to, or in close proximity to existing commercial areas, in large part to preserve agricultural land and open space around the periphery of the city (as articulated by more than 100 Policies and Actions in the 2035 General Plan).

B. Cultural Enhancements or Preservation. Does the project enhance or preserve cultural aspects of the community? The following are accepted ways to enhance and/or preserve cultural aspects of the community which may be determined to be a benefit to the City of Redlands.

1. Contributes to "art in public places" concept to a minimum of 1% of total project value.
2. Contributes to the alleviation of problems at cultural sites.
3. Provides an electronic library available to the public.
4. Enhances or contributes to current services or cultural resources.
5. Contribute to performing arts venues.

If this project provides benefit(s) that apply to cultural enhancements or preservation, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.
Proposed Project: The project does not propose contributions or enhancements to cultural aspects of the community. The project will pay City established Development Impact Fees and provide additional revenue from increased property tax assessment, business license tax, and other revenue sources that will indirectly provide funding that will contribute to enhancing and/or maintaining some of the cultural facilities within the City.

C. Heritage Enhancements or Preservation. Does the project enhance or preserve heritage aspects of the community? The following are accepted ways to enhance and/or preserve heritage aspects of the community which may be determined to be a benefit to the City of Redlands.

1. Renovates existing historic homes.
2. The project has design features which include garage doors do not face street; 50% wrap around porch on 1-1/2 sides; broad overhangs on roof; driveway located on the side of house or a circular drive; decorative wood, masonry or wrought iron fence.
3. Adaptive reuse of historic structures in appropriate zones.
4. Forming a new or annexing to an existing historic district.
5. Designation of a structure as an individual historic resource.

If this project provides benefit(s) that apply to heritage enhancements or preservation, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The property is not located within a Historic and Scenic District. The existing property is currently vacant of buildings. As such, there is no adaptive reuse opportunities present on the project site, nor the opportunity to establish a new historic district to preserve structures on-site.

D. Architectural Enhancements. Does the project enhance architectural aspects of the community? The following are accepted ways to enhance architectural aspects of the community which may be determined to be a benefit to the City of Redlands.

1. Provide architectural or decorative enhancements to the project which exceed normal architectural standards.
2. Trees or other landscaping amenities that exceed minimum requirements.
3. Contribution of off-site enhancements in the public right-of-way, such as sidewalk installation and street tree replacement.
4. Assisting in undergrounding of utility lines.

If this project provides benefit(s) that apply to architectural enhancements, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The proposal would develop the project site with 541 residential units, with a mix of high density and low-density residential uses across three neighborhoods, and comprised of multiple buildings. The multiple proposed buildings exhibit a variety of architectural styles, façades, varying roof heights, and exterior treatments and finishes. The proposed building forms and massing exhibit a high level of architectural design that meets the City's adopted Architectural Design Guidelines. The project will include sidewalks, landscaping and street trees, and public improvements.

E. Historic Downtown Enhancements or Preservation. Does the project enhance or preserve the historic downtown of the community? The following are accepted ways to enhance and/or preserve the historic downtown of the community which may be determined to be a benefit to the City of Redlands.

1. Contributes financially to viability of core downtown within expanded downtown.
2. Renovate old buildings.
3. Within an expanded downtown extends DRBA streetscape enhancements.
4. Contributing to the restoration of original building facades of existing structures.
5. Re-establishing historical "pedestrian oriented" street frontages where original buildings have been removed.
6. Provides unique adaptive use of historic building.
7. Contributes to alternative means of transportation.

If this project provides benefit(s) that apply to historic downtown enhancements or

preservation, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The project is not located within the historic downtown district. The project will pay City established Development Impact Fees and provide significant additional revenue from increased property tax assessment, business license tax, and other revenue sources that will indirectly provide funding that could be utilized to enhance and/or maintain the downtown district.

F. Job Enhancements. Does the project enhance jobs for the community? The following are accepted ways to enhance jobs for the community which may be determined to be a benefit to the City of Redlands.

1. Provides jobs for the community.
2. Brings in revenue from outside the city.
3. Internship opportunities for students at universities, high school and colleges.

If this project provides benefit(s) that apply to job enhancements, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The project is a residential development and will create a small number of jobs to staff the rental offices, and maintain the site and amenities. There will also be temporary jobs associate with the construction activities necessary to develop the subdivision.

G. Open Space Enhancements or Preservation. Does the project enhance or preserve open space aspects of the community? The following are accepted ways to enhance and/or preserve open space within the community which may be determined to be a benefit to the City of Redlands.

1. Hardscape feature that enhances wildlife-water/food/shelter.
2. Enhanced landscape on commercial project which conceals infrastructure.
3. Waterscaping which increases illusion of open space.
4. Provides open space in addition to zoning requirement.
5. Provides a Planned Residential Development
6. Provides a usable conservation easement across open space in perpetuity.
7. Preserves access for wildlife migration corridor.
8. Provides undisturbed refuge area for wildlife.

If this project provides benefit(s) that apply to open space enhancements or preservation, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The project will not detrimentally impact any open space features or amenities of the City of Redlands, nor affect wildlife. The 2035 General Plan encourages infill development, in large part to preserve open space and conservation lands around the periphery of the city. The developer will also pay applicable development impact

fees.

H. Park Enhancements or Preservation. Does the project enhance or preserve parks of the community? The following are accepted ways to enhance and/or preserve parks within the community which may be determined to be a benefit to the City of Redlands.

1. Adds improved parkland.
2. Adds parkland beyond requirements.
3. Provides pedestrian and/or bike trails to parks or provides extension of existing pedestrian and/or bike trails from the project site.
4. Adds meeting rooms accessible to local groups on a frequent basis.
5. Improves or adds to existing landscape and/or streetscape at or near the project site.

If this project provides benefit(s) that apply to park enhancements or preservation, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The project will construct several interior private courtyard areas and a parklet (with landscape, seating areas and amenities, and open to the sky) for exclusive use by the project residents. The applicant will also pay required development impact fees associated with the project, which will benefit the City's Park and Recreation Program. Additionally, the project will provide additional revenue to the City from sales tax, increased property tax assessment, business license tax, and other revenue sources, which may be used to benefit City parks.

I. Public Safety Enhancements. Does the project enhance public safety aspects of the community? The following are accepted ways to enhance public safety within the community which may be determined to be a benefit to the City of Redlands.

1. Security infrastructure is provided in an architecturally acceptable manner.
2. Exterior television monitoring on commercial project.
3. Provide a building site or fully equipped fire station or contributes to dedicated City account for future construction.
4. Provides significant additional fire equipment as determined by the Fire Department.
5. Provides for a police substation (subject to City approval).
6. Provides for a building site for a new facility.

If this project provides benefit(s) that apply to public safety enhancements, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The proposed project can be readily served by existing public safety personnel, equipment, and facilities. The City will require the developer to pay the applicable development impact fees which have been established by the City to fund public facilities, including police and public safety services. The project will also provide additional revenue (from increased property tax assessments, sales tax revenues, business license revenue, utilities revenue, etc.), which will assist in funding police and public safety operations.

J. School Enhancements. Does the project enhance schools or their operations within the community? The following are accepted ways to enhance schools within the community which may be determined to be a benefit to the City of Redlands.

1. Senior citizen development adds revenue but no impact.
2. Provides day care and after school program(s).
3. Project is close to schools serving the project.
4. Contributes equipment or other enhancements to existing day care and after school programs.
5. Assist schools with land or financing (such as Mello Roos).

If this project provides benefit(s) that apply to schools, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The project proposes to construct up to 541 dwelling units (condominiums, apartments and single-family homes). The proposed location and type of development is encouraged by the new 2035 General Plan. The project developer will pay all applicable school impact fees for residential land uses prior to building permit issuance, which will assist in funding school facilities.

K. Traffic. Does the project reduce traffic, enhance systems to improve traffic conditions or otherwise improve traffic within the community? The following are accepted ways to improve traffic within the community which may be determined to be a benefit to the City of Redlands.

1. Provide financial mitigation which helps alleviate parking problems in town i.e. by contributing to the parking district.
2. Incorporate “traffic calming” elements into the design of the circulation system.
3. Support for alternative forms of public transportation or public transportation facilities.
4. Add biking and pedestrian access to off campus intellectual or entertainment resources.
5. Have a unique method of product/inventory delivery.

If this project provides benefit(s) that apply to traffic, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The proposed project is a residential development (residential combined with commercial uses) that will contribute toward the construction of the necessary traffic improvements, including bike lanes. The project will also pay Development Impact Fees established by the City as a fair share contribution toward the development’s impacts on the local street system.

L. Wastewater System Enhancements. Does the project enhance the wastewater system within the community? The following are accepted ways to improve the wastewater system within the community which may be determined to be a benefit to the City of Redlands.

1. Provide a dual system to use potable and non-potable water.
2. Provide financial contributions to tertiary facilities at the Wastewater Treatment

Plant.

3. Improve water quality.

If this project provides benefit(s) that apply to the wastewater system, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The project is not anticipated to have any potentially significant impacts to wastewater or sewer utilities in the City of Redlands. The proposed project will construct connections to the potable and recycled water systems. The developer will be required to meet the design requirements of the City of Redlands and the Santa Ana Regional Water Quality Control Board regarding wastewater quality. The project would not require or result in the need to construct new water or wastewater treatment facilities or expansion of existing facilities in the City of Redlands, and it will not exceed wastewater treatment capacities. The developer will also pay any applicable development impact fees established by the City.

M. Miscellaneous Preservation or Enhancements. Does the project enhance or preserve elements within the community?

If this project provides benefit(s) that apply to enhancement or preservation of elements that are important to the City, describe in detail the benefit(s) with supporting reasons as to how the item(s) benefits the community.

Proposed Project: The project does not provide any additional enhancements or preservation of elements within the community than previously identified.

SOCIAL FACTORS POTENTIALLY AFFECTED:

This project may create unmitigable physical blight or overburden public services for those social factors checked below within the "Potentially Significant" or “Potentially Significant Unless Mitigation” as indicated by the checklist on the following pages.

__ Agricultural/Citrus Removal	__ Police Services	__ Recreational Programs
__ Wildlife/Habitat	__ Downtown Impacts	__ Land Use Compatibility
__ Traffic	__ Residential Design	__ Schools
__ Fire Services	__ Cultural Facilities	
__ Paramedic Services	__ Park Facilities	

V. DETERMINATION

On the basis of this initial evaluation:

X **I find that the proposed project will not create unmitigable physical blight or overburden public services in the community, and no additional information or evaluation is needed.**

__ I find that although the proposed project could create unmitigable physical blight or overburden public services in the community, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project by the applicant.

__ I find that the proposed project may create unmitigable physical blight or overburden public services in the community, and additional information or evaluation is needed in the following areas:

__ I find that the proposed project has already been evaluated for socioeconomic impacts and the prior evaluation adequately evaluated this project.

Signed: 

Ryan Murphy
Senior Planner
January 23, 2024

VI. EVALUATION OF SOCIAL FACTORS

Explanations of all "Potentially Significant," "Potentially Significant Unless Mitigation Incorporated," "Less Than Significant Impact," and "No Impact" answers are provided on the attached pages.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AGRICULTURAL/CITRUS REMOVAL. Would the proposal:				
a) Affect agricultural resources or operations (e.g. impacts to soils or farmlands, or impacts from incompatible land uses)?	___	___	___	✓
b) Remove active citrus groves from production?	___	___	___	✓

Agricultural/Citrus Removal – Discussion

a, b) The project site previously supported agricultural uses (citrus groves), however the site does not currently support agricultural operations. The property is currently designated as Commercial in the City's General Plan, proposed to change to High Density Residential. These designations anticipated the conversion of the property from agriculture to non-agricultural uses, as the area was developed. Therefore, no impacts to farmland would result, and no mitigation measures are warranted.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
2. WILDLIFE/HABITAT/OPEN SPACE PRESERVATION. Would the proposal:				
a) Eliminate or have negative impact upon wildlife corridors?	—	—	—	✓
b) Tend to urbanize open space impacting preservation and conservation of natural resources?	—	—	—	✓
c) Interfere with use of recognized trails used by joggers, hikers, equestrians or bicyclists?	—	—	—	✓
d) Eliminate, reduce, or have any negative impact upon wildlife habitat areas to include the protection of fringe or buffer areas?	—	—	—	✓

Wildlife/Habitat/Open Space Preservation – Discussion

a) The project site does not support special-status plant and/or animal studies, as analyzed in a Biological Resources Analysis prepared for the project. The project site is bordered by residential development, commercial development, and vacant land. Additionally, the project site is in close proximity to SR-210 within an urbanized setting. Given the setting and its location to major transportation corridors, the project site is not located in a wildlife movement corridor. Therefore the project would not eliminate or have a negative impact on wildlife corridors. There will be no impacts.

b) The project site is in an area designated by the General Plan for Commercial land uses, and contains no natural resources. The project would not urbanize designated open space areas that could impact preservation and conservation of natural resources. The project would help implement the policies of the City's 2035 General Plan, and as such, would help to preserve open space and conservation lands around the periphery of the City of Redlands. There will be no impacts.

c) The project will not interfere with the use of any existing or recognized trails. The proposed project will include several new paved pedestrian and bicycle paths. There are no impacts.

d) See discussion of item a) above.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
3. TRAFFIC. Would the proposal:				
a.) Result in increased vehicle trips or congestion?	___	___	✓	___
b.) Create additional traffic so as to be in conflict with the policies of the General Plan?	___	___	✓	___
c.) Does traffic impact livability of a residential neighborhood on streets which, due to design or terrain features, street side development or other factors, have greater than usual sensitivity to increased traffic?	___	___	✓	___
d.) Create additional traffic so as to increase the level of service on roadways that are adjacent to or in the vicinity of the project?	___	___	✓	___

Traffic – Discussion

a-d) In accordance with Measure U, a traffic study was prepared for the project (Attachment X), to evaluate the potential for transportation impacts resulting from the development of the proposed project. The study, prepared by Michael Baker International, analyzed existing conditions without the project, existing conditions with the project, and recommended improvements. The traffic study specifies specific roadway and site access improvements to be included in the project, which are incorporated in the project plans:

- Half-width construction along W Lugonia Avenue, Pennsylvania Avenue, and Karon Street project frontages.
- Construction one-way-stop control at the new intersection of Tennessee Street and the planned Pennsylvania Avenue. East leg of intersection to be full-width improvement.
- Construction of a one-way-stop-controlled driveway to create a new T-intersection along W Lugonia Avenue, west of New York Street.
- Construction of a signal-controlled driveway at the intersection of W Lugonia Avenue and New York Street/Project Driveway, with signal modifications to accommodate new north intersection leg.
- Construction a full-width fourth leg of the stop control intersection of Pennsylvania Avenue and Karon Street. Specifically, construction of the west leg of the intersection to connect the newly constructed Pennsylvania Avenue to the existing three-legged intersection.
- Signal timing optimization of existing intersections.

(*continued from previous page*) As shown in the study, the addition of the proposed project with the above improvements does not degrade the Levels of Service below the current Levels of Service grade. Therefore, the proposed project is forecast to result in no substantial transportation effects at the study intersections and no other improvements are required. Impacts will be less than significant.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4. FIRE & PARAMEDIC SERVICES. Will the proposal result in:				
a) Requiring fire and paramedic services that are beyond the current capabilities of the Fire Department?	—	—	✓	—
b) An increase in response time for essential fire or paramedic services to the remainder of the community?	—	—	✓	—
c) The need for additional fire or paramedic facilities or equipment?	—	—	✓	—

Fire & Paramedic Services – Discussion

a) All buildings will be required to be constructed according to current California Building Code and California Fire Code standards. Existing fire and paramedic service capabilities provided by the City of Redlands are adequate to serve the project. The developer will pay applicable development impact fees prior to building permit issuance, which compensates the City for the development's incremental and proportional effect on these public services. Less than significant impacts are anticipated, and no special mitigation measures are required.

b) The City of Redlands Fire Department provides fire and emergency medical services to the project site and vicinity. At this time, citywide level of service is expected to be 0.76 firefighters per 1,000 residents. Fire Department services are typically financed through the General Fund. The City would be able to provide adequate Fire Department services in a timely manner. The developer will pay applicable development impact fees prior to building permit issuance, which compensates the City for the development's incremental and proportional effect on fire services. Therefore, the project is not expected to have any potentially significant impacts in terms of response times. Less than significant impacts are anticipated, and no special mitigation measures are required.

c) Present capabilities of the Fire Department will not be impacted with development of the project. There will be no need for additional fire or paramedic facilities or equipment. Future revenue from the project (e.g., increased property tax assessment, sales tax revenue) will assist in funding fire facilities, equipment, and operations for the city. In addition, the developer will pay applicable development impact fees prior to building permit issuance. Less than significant impacts are anticipated, and no mitigation is required.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
5. POLICE SERVICES. Would the proposal result in:				
a) Requiring police services that are beyond the current capabilities of the Police Department?	—	—	✓	—
b) An increase in response time for essential police services to the remainder of the community?	—	—	✓	—
c) The need for additional police facilities or equipment?	—	—	✓	—
d) Increase in crime as a result of the type of business?	—	—	✓	—

Police Services – Discussion

a-d) The City of Redlands Police Department will provide services to the project site. The Police Department contains an Operations Division and an Investigations and Support Services Division. In addition to sworn patrol officers, the Department has several sub-units, including Investigations, the Multiple Enforcement Team, Narcotics, and volunteers. Police services are generally financed through the General Fund. The project will pay Development Impact Fees, which have been established by the City to fund public facilities, including police. The project and its future residents will also provide additional revenue to the City resulting from increased property tax assessment revenue, which will assist in funding police operations. Additionally, the project will be required to provide and implement a site security plan during grading and construction to ensure that impacts from construction site theft are kept at a less than significant level.. Less than significant impacts are anticipated, and no special mitigation measures are required.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
6. DOWNTOWN IMPACTS. Would the proposal result in:				
a) A reduction of the number or types of businesses located in the downtown?				✓
b) An unfair or unreasonable competitive disadvantage to existing businesses downtown?				✓
c) Creation of vacant buildings and the potential for blight?				✓
d) Cause an unreasonable increase in traffic downtown?				✓
e) Economic and social effects of businesses competing with downtown businesses?				✓

Downtown Impacts – Discussion

a-e) The proposed project includes a residential development within the northern portion of the City and does not have the potential to negative impact the Downtown Business District. The future residents of this subdivision may patronize the downtown area and provide an additional source of revenue to the Downtown Business District. Therefore, impacts are considered to be less than significant.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
7. RESIDENTIAL DESIGN. Would the proposal:				
a) Conflict with existing codes and or standards?	___	___	___	✓
b) Meet minimum point standards of the Residential Development Allocation process?	___	___	___	✓

Residential Design – Discussion

a) Upon City Council approval of the Density Bonus Agreement accompanying the project, the proposed project will comply with the applicable provisions of the Redlands Municipal Code, including Title 18 (Zoning Regulations) and Title 15 (Buildings and Construction). The proposed project includes residential dwelling units (apartments and condominiums). The buildings are designed with high-quality architecture and building materials. Conditions of approval are included in the project for the plan check process (subsequent to entitlement). No impacts are anticipated in terms of conflicts with existing codes and standards.

b) Due to current State law (SB 330 known as the “Housing Crisis Act of 2019”), residential projects and residential subdivisions are not evaluated by a point system or the standards of the Residential Development Allocation process. SB 330 prohibits annual limits on the number of permits issued for the approval and construction of housing during any one year. City Council Resolution No. 8082 suspended certain provisions of RMC Chapter 19.04 relating to the competitive evaluation of residential development projects as long as the State law remain in effect.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
8. CULTURAL FACILITIES. Would the proposal result in:				
a) Impacts to an historic residential structure, neighborhood, or district?	___	___	___	✓
b) Impacts to an historic commercial structure or district?	___	___	___	✓
c) Impacts to cultural facilities such as the Smiley Library, Redlands Bowl, Lincoln Shrine, Joslyn Center, Community Center, etc.?	___	___	___	✓
d) Have the potential to cause a physical change which would affect unique ethnic cultural values?	___	___	___	✓
e) Potential to disturb existing religious facilities.	___	___	___	✓
f) Impact or restrict religious or sacred uses.	___	___	___	✓

Cultural Facilities – Discussion

a, b) The proposed project will not have an impact on historic residential structures, neighborhoods or districts, nor will it have an impact on historic commercial structures or districts. The property is vacant and does not include residential or commercial structures or districts as part of the project site. There would be no impacts.

c) The project would not impact cultural facilities such as the Smiley Library, Redlands Bowl, Lincoln Shrine, Joslyn Center, Community Center, etc. The development will provide revenue to the City through increased property tax assessment generated by the future homes which may assist in the operation of some cultural facilities. Thus, the project will not have an adverse impact to cultural facilities.

d) No part of this project has the potential to affect unique ethnic cultural values.

e, f) No religious facilities or sacred uses are located within or adjacent to the project site. The project will not result in impacts to existing religious facilities or restrict religious uses.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
9. PARK FACILITIES & RECREATIONAL PROGRAMS. Will the proposal result in:				
a) Increases in use or demand for park facilities or programs to include manpower, facilities or equipment?	___	___	✓	___
b) A ratio of parkland to population which exceeds standards and or goals established by the General Plan?	___	___	✓	___

Park Facilities & Recreational Programs – Discussion

a, b) The project will not adversely affect existing or planned recreational facilities nor create a significant new demand for additional recreational facilities. The project is projected to accommodate an estimated 328 additional residents to the City of Redlands. The City's Facilities and Community Services Department maintains eighteen (18) established parks, which comprise over 253 acres of land. When compared with the General Plan requirement for one acre of City of Redlands parkland per one thousand residents, the City's park area will continue to greatly exceed this requirement, even with the addition of new residents. In addition, the design of the project incorporates new recreational amenities and open space for the residential development that will be maintained by a Home Owners Association and is adjacent to a public sports park. The project will also generate additional revenue to the City with increased property tax assessment, which will assist in funding park facilities and services.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
10. LAND USE COMPATIBILITY. Would the proposal result in:				
a) Land uses that are not compatible or consistent with the General Plan?	—	—	—	✓
b) Economic impacts on businesses and small property owners from a project.	—	—	—	✓
c) Physical separation or division of an existing community	—	—	—	✓
d) Loss of jobs for the community?	—	—	—	✓
e) Overcrowding of housing?	—	—	—	✓

Land Use Compatibility – Discussion

a) No detrimental impacts are anticipated in terms of the General Plan. The current land use designation is 'Commercial' for the majority of the subject and is proposed to be change to High Density Residential. As analyzed in the staff report, this general plan amendment directly implements the goals and policies of the General Plan, specifically as it relates to the 2021-2029 Housing Element, and many other policies that support development of high-intensity residential units near regional shopping centers, providing a variety of housing types, and implementing buffers between higher intensity uses, among others. There is no impact.

b) The project is not expected to result in any detrimental impacts to businesses or small property owners. The project will develop a large vacant area of land that is directly adjacent to commercial areas, with residential uses. These future residents will likely patronize local businesses. No significant detrimental economic impacts on businesses or small property owners are anticipated. Any detrimental impacts are expected to be less than significant, and on the whole, the beneficial effects of new development and public improvements are expected to greatly outweigh any negative effects.

c) No detrimental impacts are anticipated. The project site is located on West Lugonia Avenue and the project proposes streets and walkways that will further enhance connectivity within the immediate neighborhood. This project will in no way physically divide or separate the existing community. The project would extend the existing Pennsylvania Avenue further to the west from Karon Street to Tennessee Street. The project would result in a physical connection of an established roadways in the area.

d) The project will ultimately create full-time and part-time jobs for both construction and operation of the residential communities. This could include leasing office employees,

service and maintenance workers, and expand existing businesses that may maintain the landscaping, park areas and recreational amenities. The project is not expected to result in loss of jobs to the community. No detrimental impacts are anticipated.

e) No impacts are anticipated in terms of housing or overcrowding. No part of this project has the potential to result in overcrowding of the current housing stock in the city. The project will construct up to 523 new residential units which will consist of apartments (for rent), condominiums (for ownership), and single family properties (for ownership). The new dwelling units will help the City meet its Housing Element goals for providing new and affordable high-quality dwelling units in convenient locations throughout the city that can serve different types of households at all income levels.

Issues and Supporting Information Sources:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
11. SCHOOLS. Would the proposal result in:				
a) Creating an overcapacity in schools?	—	—	✓	—
b) The need for additional school facilities or equipment?	—	—	✓	—
c) Land uses not consistent with or compatible with existing educational facilities in community?	—	—	—	✓
d) Social or academic impacts on students resulting from school closures.	—	—	—	✓

Schools – Discussion

a-d) The project will eventually create additional students within the 451 residential units that could be built on the site. Any potential direct impacts attributable to the Redlands Unified School District resulting from this project will be offset through the payment of state established school fees assessed at the time of building permit issuance. Therefore, impacts to schools are considered to be less than significant with payment of applicable school impact fees.

TABLE 1
CITY OF REDLANDS : MODEL
LAND USE SUMMARY:
FISCAL IMPACT ANALYSIS

LAND USE	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034	TOTAL	
RESIDENTIAL UNITS												
RURAL LIVING (0.2 - 0.4 du/acre)	0	0	0	0	0	0	0	0	0	0	0	
VERY-LOW-DENSITY RESIDENTIAL (0 - 2.7 du/acre)	0	0	0	0	0	0	0	0	0	0	0	
LOW-DENSITY RESIDENTIAL (0 - 6.0 du/acre)	18	0	0	0	0	0	0	0	0	0	18	DEVELOPER
LOW-MEDIUM-DENSITY RESIDENTIAL (0 - 8.0 du/acre)	0	0	0	0	0	0	0	0	0	0	0	
MEDIUM-DENSITY RESIDENTIAL (0 - 15.0 du/acre)	0	0	0	0	0	0	0	0	0	0	0	
HIGH DENSITY (0 - 27.0 du/acre)	523	0	0	0	0	0	0	0	0	0	523	DEVELOPER
TOTAL, RESIDENTIAL UNITS	541	0	0	0	0	0	0	0	0	0	541	
CUMULATIVE, RESIDENTIAL UNITS	541	541	541	541	541	541	541	541	541	541	NA	
PROJECT RESIDENTS /1												
RURAL LIVING (0.4 - 0.2 du/acre)	0	0	0	0	0	0	0	0	0	0	0	
VERY-LOW-DENSITY RESIDENTIAL (0 - 2.7 du/acre)	0	0	0	0	0	0	0	0	0	0	0	
LOW-DENSITY RESIDENTIAL (0 - 6.0 du/acre)	50	0	0	0	0	0	0	0	0	0	50	
LOW-MEDIUM-DENSITY RESIDENTIAL (0 - 8.0 du/acre)	0	0	0	0	0	0	0	0	0	0	0	
MEDIUM-DENSITY RESIDENTIAL (0 - 15.0 du/acre)	0	0	0	0	0	0	0	0	0	0	0	
HIGH DENSITY (0 - 27 du/acre)	1,465	0	0	0	0	0	0	0	0	0	1,465	
TOTAL, PROJECT RESIDENTS	1,515	0	0	0	0	0	0	0	0	0	1,515	
CUMULATIVE, PROJECT RESIDENTS	1,515	1,515	1,515	1,515	1,515	1,515	1,515	1,515	1,515	1,515	NA	
CUMULATIVE PROJECT ACREAGE /2												
RURAL LIVING (0.4 - 0.2 du/acre)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	
VERY-LOW-DENSITY RESIDENTIAL (0 - 2.7 du/acre)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	
LOW-DENSITY RESIDENTIAL (0 - 6.0 du/acre)	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	3.11	NA	
LOW-MEDIUM-DENSITY RESIDENTIAL (0 - 8.0 du/acre)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	
MEDIUM-DENSITY RESIDENTIAL (0 - 15.0 du/acre)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	
HIGH DENSITY (0 - 27 du/acre)	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	NA	
CUMULATIVE, PROJECT ACREAGE	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	NA	
LAND NON-RESIDENTIAL ACRES, ANNUAL /3												
RETAIL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
INDUSTRIAL	0.0	0	0	0	0	0	0	0	0	0	0.0	
OTHER NON-RESIDENTIAL	0.0	0	0	0	0	0	0	0	0	0	0.0	
ANNUAL TOTAL, NON-RESIDENTIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
LAND NON-RESIDENTIAL ACRES, CUMULATIVE												
RETAIL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	
INDUSTRIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	
OTHER NON-RESIDENTIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	
CUMULATIVE TOTAL, NON-RESIDENTIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	
LAND NON-RESIDENTIAL EDU'S, CUMULATIVE /4												
RETAIL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	
INDUSTRIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	
OTHER NON-RESIDENTIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	
CUMULATIVE TOTAL, NON-RESIDENTIAL EDU'S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	
BUILDING NON-RESIDENTIAL SQ.FT., ANNUAL												
RETAIL	0	0	0	0	0	0	0	0	0	0	0	
INDUSTRIAL	0	0	0	0	0	0	0	0	0	0	0	
OTHER NON-RESIDENTIAL	0	0	0	0	0	0	0	0	0	0	0	
ANNUAL TOTAL, NON-RESIDENTIAL	0	0	0	0	0	0	0	0	0	0	0	
BUILDING NON-RESIDENTIAL SQ.FT., CUMULATIVE												
RETAIL	0	0	0	0	0	0	0	0	0	0	NA	
INDUSTRIAL	0	0	0	0	0	0	0	0	0	0	NA	
OTHER NON-RESIDENTIAL	0	0	0	0	0	0	0	0	0	0	NA	
CUMULATIVE TOTAL, NON-RESIDENTIAL	0	0	0	0	0	0	0	0	0	0	NA	

SHADED CELLS ARE VARIABLE ASSUMPTIONS OR INPUTS UNIQUE TO THE PROJECT.

NOTES:

1. Average number of residents per Dwelling Unit ("DU") provided by the California Department of Finance.
   Residents per DU = 2.801 OTHER

2. Assumes residential acreage per unit of the following:

Rural Living (less than 0.2 - 0.4 du/acre)	NA	
Very-Low-Density Residential (0 - 2.7 du/acre)	NA	
Low-Density Residential (0 - 6.0 du/acre)	0.17	DEVELOPER
Low-Medium-Density Residential (0 - 8.0 du/acre)	NA	
Medium-Density Residential (0 - 15.0 du/acre)	NA	
High Density (0 - 27.0 du/acre)	0.04	DEVELOPER

3. Assumes average non-residential site coverage of the following (based on the General Plan):

Retail	0.0%
Industrial	0.0%
Other Non-Residential	0.0%

4. Assumes non-residential equivalent dwelling units of the following:
   EDUs per acre = 6.0 OTHER

GENERAL PLAN BUILDOUT	PROJ. Sq. Ft.*	F.A.R.*	Projected Acreage	
RETAIL	8,646,200	0.30	661.63	
INDUSTRIAL	10,048,400	0.40	576.70	OTHER
OTHER NON-RESIDENTIAL	21,641,990	0.45	1,104.07	
	40,336,590		2,342.40	

*As disclosed in the General Plan

Typical Home Size: 2,835 OTHER
Estimated Equivalency: 6.07

TABLE 2
CITY OF REDLANDS : MODEL
LAND USE SUMMARY:
FISCAL IMPACT ANALYSIS

ASSESSED VALUATION ASSUMPTIONS		
RESIDENTIAL		
RURAL LIVING ASSESSED VALUE	$0	
VERY-LOW-DENSITY ASSESSED VALUE	$0	
LOW-DENSITY ASSESSED VALUE	$581,944	DEVELOPER
LOW-MEDIUM-DENSITY ASSESSED VALUE	$0	
MEDIUM-DENSITY ASSESSED VALUE	$0	
HIGH DENSITY ASSESSED VALUE	$400,669	DEVELOPER
NON-RESIDENTIAL		
RETAIL ASSESSED VALUE	$0.00	
INDUSTRIAL ASSESSED VALUE	$0.00	
OTHER NON-RESIDENTIAL ASSESSED VALUE	$0.00	

SECURED PROPERTY TAX ASSUMPTIONS		
NET APPORTIONMENT FACTORS AS A FRACTION OF 1.0% TAX RATE		
PROPERTY TAXES PASSED THROUGH TO CITY /1	20.00%	CITY

1. Based on amount disclosed in the adopted 1998-99 budget.

UNSECURED PROPERTY TAX ASSUMPTIONS		
RESIDENTIAL:		
UNSECURED TAXES AS A % OF SECURED	2.75%	CITY
NON-RESIDENTIAL:		
UNSECURED TAXES AS A % OF SECURED	10.00%	

FISCAL YEAR ($s x1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034
SECURED ASSESSED VALUE CALCULATION:										
ANNUAL ASSESSED VALUES (YEARLY INCREASE)										
RESIDENTIAL										
RURAL LIVING	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VERY-LOW-DENSITY RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LOW-DENSITY RESIDENTIAL	$10,475	$0	$0	$0	$0	$0	$0	$0	$0	$0
LOW-MEDIUM-DENSITY RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MEDIUM-DENSITY RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
HIGH DENSITY RESIDENTIAL	$209,550	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL RESIDENTIAL	$220,025	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL										
RETAIL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
INDUSTRIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL YEARLY VALUATION INCREASE:	$220,025	$0	$0	$0	$0	$0	$0	$0	$0	$0
CUMULATIVE ASSESSED VALUES										
RESIDENTIAL										
RURAL LIVING	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VERY-LOW-DENSITY RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LOW-DENSITY RESIDENTIAL	$10,475	$10,475	$10,475	$10,475	$10,475	$10,475	$10,475	$10,475	$10,475	$10,475
LOW-MEDIUM-DENSITY RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MEDIUM-DENSITY RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
HIGH DENSITY RESIDENTIAL	$209,550	$209,550	$209,550	$209,550	$209,550	$209,550	$209,550	$209,550	$209,550	$209,550
TOTAL RESIDENTIAL	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025
NON-RESIDENTIAL										
RETAIL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
INDUSTRIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL CUMULATIVE ASSESSED VALUE	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025	$220,025
SECURED PROPERTY TAX REVENUE CALCULATION:										
CITY OF REDLANDS										
RESIDENTIAL	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL SECURED TAX REVENUES TO CITY	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440
UNSECURED PROPERTY TAX REVENUE CALCULATION:										
CITY OF REDLANDS										
RESIDENTIAL	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL UNSECURED TAX REVENUES TO CITY	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12
TOTAL PROPERTY TAXES TO CITY	$452	$452	$452	$452	$452	$452	$452	$452	$452	$452

TABLE 3
CITY OF REDLANDS : MODEL
LAND USE SUMMARY:
FISCAL IMPACT ANALYSIS

RESIDENTIAL INDIRECT SALES TAX GENERATION ASSUMPTIONS		
AVERAGE HOUSEHOLD INCOME ASSUMPTIONS:		
WEIGHTED AVERAGE RESIDENTIAL PRICE	$387,338	
AVERAGE RESIDENTIAL MORTGAGE (20% DOWN)	$309,871	
ANNUAL MORTGAGE PAYMENTS @ 6.50% & 30 YEARS	$23,503	CITY
AVG. HOUSEHOLD INCOME (3:1 INCOME/PAYMENT RATIO):	$70,509	
RETAIL TAXABLE EXPENDITURE (% OF INCOME):	25.0%	
PROJECT RESIDENTS' PURCHASES OUTSIDE PROJECT AND WITHIN INCORPORATED CITY:	50.0%	

BUSINESS DIRECT SALES & USE TAX GENERATION ASSUMPTIONS		
SALES TAXES PASSED THROUGH TO CITY, APPLIED TO COSTS: /1	1.00%	CITY
MEASURE 'I' TAXES PASSED THROUGH TO TRANSIT AUTHORITY	0.00%	
LOCAL TRANSPORTATION SALES TAXES	0.00%	
DISPLACED EXISTING CITY SALES TAX	33.33%	
PROJECT RETAIL TAXABLE SALES PER SQ. FT:		
RETAIL	$0.00	
INDUSTRIAL	$0.00	
OTHER NON-RESIDENTIAL	$0.00	

PROPERTY TRANSFER TAX ASSUMPTIONS		
RESIDENTIAL PROPERTY TURNOVER RATE	10.00%	CITY
BUS & COM PROPERTY TURNOVER RATE	5.00%	
TRANSFER TAX AS A % OF RESALE DOLLAR	0.11%	
PROPERTY TRANSFER TAX PASSED THROUGH TO CITY	50.00%	

1. Based on amount passed through to city in the adopted 1997-98 budget.

FISCAL YEAR ($s x1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034
SALES & USE TAX REVENUE CALCULATION (CUMULATIVE):										
INDIRECT SALES TAX GENERATION										
RESIDENTIAL TAXABLE EXPENDITURES	$9,536	$9,536	$9,536	$9,536	$9,536	$9,536	$9,536	$9,536	$9,536	$9,536
TOTAL TAXABLE PURCHASES WITHIN CITY	$4,768	$4,768	$4,768	$4,768	$4,768	$4,768	$4,768	$4,768	$4,768	$4,768
RESIDENTIAL SALES TAX GENERATION	$48	$48	$48	$48	$48	$48	$48	$48	$48	$48
DIRECT SALES TAX GENERATION										
RETAIL TAXABLE SALES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
INDUSTRIAL TAXABLE SALES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER NON-RESIDENTIAL TAXABLE SALES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SUB-TOTAL DIRECT TAXABLE SALES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LESS: DISPLACED EXISTING CITY SALES TAX	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL DIRECT TAXABLE SALES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL DIRECT SALES TAX GENERATION	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL PROJECT SALES & USE TAX REVENUES, APPLIED TO COSTS	$48	$48	$48	$48	$48	$48	$48	$48	$48	$48
RESIDENTIAL MEASURE 'I' SALES TAXES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL MEASURE 'I' SALES TAXES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
RESIDENTIAL LOCAL TRANSPORTATION SALES TAXES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL LOCAL TRANSPORTATION SALES TAXES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL PROJECT SALES & USE TAX REVENUES, FOR TRANSPORTATION	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PROPERTY TRANSFER TAX CALCULATION (CUMULATIVE):										
RESIDENTIAL PROPERTY TRANSFER TAXES	$12.10	$12.10	$12.10	$12.10	$12.10	$12.10	$12.10	$12.10	$12.10	$12.10
NON-RESIDENTIAL PROPERTY TRANSFER T AXES	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL ANNUAL PROPERTY TRANSFER TAXES	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12

SHADED CELLS ARE VARIABLE ASSUMPTIONS OR INPUTS UNIQUE TO THE PROJECT.

TABLE 4
CITY OF REDLANDS : MODEL
LAND USE SUMMARY:
FISCAL IMPACT ANALYSIS

BUSINESS LICENSE FEE REVENUE		FRANCHISE FEES (PER CAPITA)			TRANSIENT OCCUPANCY TAX
RESIDENTIAL	NA		RESIDENTIAL	NON-RESIDENTIAL	NUMBER OF AVAILABLE HOTEL ROOMS
NON-RESIDENTIAL		TOTAL FRANCHISE	$16.71	$16.71	OCCUPANCY RATE
BUSINESS LICENSE FEES ARE CHARGED AT A RATE EQUAL					AVERAGE BILLING RATE PER ROOM
TO $12 FOR THE FIRST $5,000 IN GROSS SALES, PLUS $3					% PASSED THROUGH TO CITY
FOR EACH ADDITIONAL $5,000 INCREMENT IN GROSS SALES.					AVERAGE YEARLY OCCUPANCY REVENUES TO CITY

FISCAL YEAR	($s x1,000)	end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034
BUSINESS LICENSE FEE REVENUE												
RESIDENTIAL												
RURAL LIVING			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VERY-LOW-DENSITY RESIDENTIAL			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW-DENSITY RESIDENTIAL			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOW-MEDIUM-DENSITY RESIDENTIAL			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MEDIUM-DENSITY RESIDENTIAL			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HIGH DENSITY RESIDENTIAL			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL RESIDENTIAL			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NON-RESIDENTIAL												
RETAIL			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
INDUSTRIAL			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER NON-RESIDENTIAL			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL NON-RESIDENTIAL			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, BUSINESS LICENSE FEE REVENUE			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FRANCHISE FEE REVENUE												
RESIDENTIAL FRANCHISE FEES			$25.324	$25.324	$25.324	$25.324	$25.324	$25.324	$25.324	$25.324	$25.324	$25.324
NON-RESIDENTIAL FRANCHISE FEES			$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
TOTAL, FRANCHISE FEE REVENUE			$25	$25	$25	$25	$25	$25	$25	$25	$25	$25
TRANSIENT OCCUPANCY TAX REVENUE												
TOTAL, TRANSIENT OCCUPANCY TAX REVENUE			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

SHADED CELLS ARE VARIABLE ASSUMPTIONS OR INPUTS UNIQUE TO THE PROJECT.

TABLE 5
CITY OF REDLANDS : MODEL
OTHER REVENUE AND REVENUE SUMMARY
FISCAL IMPACT ANALYSIS

OTHER GENERAL REVENUES (PER CAPITA METHOD) /1	
OTHER TAXES /2	$10.86
OTHER REVENUES	$6.96
COMMUNITY DEVELOPMENT	NA
LIBRARY	NA
POLICE DEPARTMENT	NA
POLICE - ANIMAL CONTROL	NA
POLICE - RECREATION	NA
POLICE - SENIOR SERVICES	NA
FIRE	NA
PUBLIC WORKS	NA
SUBTOTAL, OTHER REVENUES PER CAPITA:	$17.83

INCOME FROM INVESTMENTS		
EFFECTIVE INTEREST	2.50%	OTHER

1. See Appendix for calculation of per capita multipliers. For items without values, a net cost technique is being employed.
2. Other Taxes includes Public Safety Sales Tax.

FISCAL YEAR ($s x1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034
PER CAPITA REVENUES										
OTHER TAXES										
RESIDENTIAL	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, OTHER TAXES	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16
OTHER REVENUES										
RESIDENTIAL	$11	$11	$11	$11	$11	$11	$11	$11	$11	$11
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, OTHER LICENSES, PERMITS & FINES	$11	$11	$11	$11	$11	$11	$11	$11	$11	$11
COMMUNITY DEVELOPMENT										
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, STATE REVENUES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LIBRARY										
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, FEDERAL REVENUES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
POLICE DEPARTMENT										
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, CITY ATTORNEY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
POLICE - ANIMAL CONTROL										
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, ENGINEERING SERVICES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
POLICE - RECREATION										
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, FIRE DEPARTMENT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
POLICE - SENIOR SERVICES										
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, JOSLYN CENTER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FIRE										
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, LIBRARY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PUBLIC WORKS										
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL, PARKS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL RESIDENTIAL PER CAPITA REVENUES	$27	$27	$27	$27	$27	$27	$27	$27	$27	$27
TOTAL NON-RESIDENTIAL PER CAPITA REVENUES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL PER CAPITA REVENUES	$27	$27	$27	$27	$27	$27	$27	$27	$27	$27
TOTAL RESIDENTIAL CASE STUDY REVENUES	$537	$537	$537	$537	$537	$537	$537	$537	$537	$537
TOTAL NON-RESIDENTIAL CASE STUDY REVENUES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL CASE STUDY REVENUES	$537	$537	$537	$537	$537	$537	$537	$537	$537	$537
RESIDENTIAL REV AVAILABLE FOR INV. INCOME	$564	$564	$564	$564	$564	$564	$564	$564	$564	$564
NON-RESIDENTIAL REV AVAILABLE FOR INV. INCOME	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL REVENUES AVAILABLE FOR INVESTMENT INCOME	$564	$564	$564	$564	$564	$564	$564	$564	$564	$564
RESIDENTIAL INVESTMENT INCOME	$14	$14	$14	$14	$14	$14	$14	$14	$14	$14
NON-RESIDENTIAL INVESTMENT INCOME	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL INVESTMENT INCOME	$14	$14	$14	$14	$14	$14	$14	$14	$14	$14

SHADED CELLS ARE VARIABLE ASSUMPTIONS OR INPUTS UNIQUE TO THE PROJECT.

TABLE 6
CITY OF REDLANDS : MODEL
POLICE DEPARTMENT, FIRE DEPARTMENT, PUBLIC WORKS & PER CAPITA COSTS
FISCAL IMPACT ANALYSIS

POLICE DEPARTMENT COSTS		
RESIDENTIAL CALLS	16,562	CITY
COST PER DWELLING UNIT	$295	
NON-RESIDENTIAL RETAIL CALLS	8,987	
COST PER BUILDING SQUARE FOOT	$0.47	
NON-RESIDENTIAL INDUSTRIAL CALLS	344	
COST PER BUILDING SQUARE FOOT	$0.02	
OTHER NON-RESIDENTIAL CALLS	7,948	
COST PER BUILDING SQUARE FOOT	$0.42	
MISCELLANEOUS CALLS /2	17,628	
TOTAL CALLS	51,469	

1. Based on Net Cost and number of calls to residential or non-residential properties.
2. Based on conversations with the Police Chief, these incidences are not related to residences or businesses in the City.

EXISTING DWELLING UNITS	25,984	CITY
EXISTING NON-RESIDENTIAL SQUARE FOOTAGE	8,824,690	

RESIDENTIAL FIRE DEPARTMENT COSTS [1]		
RESIDENTIAL CALLS	3,579	CITY
COST PER DWELLING UNIT	$168	
NON-RESIDENTIAL RETAIL CALLS	446	
COST PER BUILDING SQUARE FOOT	$0.06	
NON-RESIDENTIAL INDUSTRIAL CALLS	155	
COST PER BUILDING SQUARE FOOT	$0.02	
OTHER NON-RESIDENTIAL CALLS	1,459	
COST PER BUILDING SQUARE FOOT	$0.20	
MISCELLANEOUS CALLS /2	1,988	
TOTAL CALLS	7,627	

1. Based on Net Cost and number of calls to residential or non-residential properties.
2. Based on information from Fire Chief, these incidences are not related to residences or businesses in the City.

PUBLIC INFRASTRUCTURE REQUIREMENTS /1		
ROADS (LANE MILES)	0.6	DEVELOPER
TRAFFIC INTERSECTIONS REQUIRING SIGNALS	1.0	
AGGREGATE LANDSCAPING (ACRES)	0.0	
PARK ACREAGE (GROSS)	0.0	
STREET LIGHTS	2.0	DEVELOPER
OPEN SPACE (ACRES)	0.0	
TRAILS (LINEAL MILE)	0.0	
STORM DRAINS (MILES)	0.0	

1. Infrastructure should exclude privately maintained facilities.

PUBLIC WORKS MAINTENANCE COSTS		
PAVEMENT MAINTENANCE PER LANE MILE /1	$5,000	CITY
STREET SWEEPING PER CURB MILE - ALL STREETS /1	$9	
TRAFFIC SIGNAL OPERATIONS & MAINTENANCE PER INTERSECTION /1	$5,560	
LANDSCAPE MAINTENANCE PER ACRE /1	$12,500	
PARK MAINTENANCE PER ACRE /1	$7,000	
STREET LIGHT MAINTENANCE COST PER LIGHT /1	$125	
OPEN SPACE MAINTENANCE PER ACRE /2	$125	
TRAIL MAINTENANCE PER LINEAL MILE /2	$500	
STORM DRAIN MAINTENANCE PER MILE /2	$750	

1. Based on consultations with the City of Redlands Public Works Department.
2. Based on consultant's experience.

CITY GENERAL GOVERNMENT COSTS*	
CITY COUNCIL	$174,090
CITY CLERK	$285,939
CITY MANAGER	$314,819
FINANCE	$605,155
CITY TREASURER	$2,875,064
CITY ATTORNEY	$1,159,167
TOTAL, CITY GENERAL GOVERNMENT COSTS	$5,414,234

*Costs have been reduced to reflect department specific revenues.

CITY GENERAL GOVERNMENT COSTS CONTINUED	
TOTAL CITY OPERATING BUDGET*	##########
*Excludes Debt Service, Utilities and Capital Improvements.	
OVERHEAD AS A % OF OPERATING BUDGET	11.04%
OVERHEAD AS A % OF DIRECT COSTS	12.41%
OVERHEAD BY DEFINITION CAUSING NO COST	0.00%
OVERHEAD AS % OF DIRECT, AVERAGE	6.20%

OTHER NET COSTS (PER CAPITA METHOD) /1	
COMMUNITY DEVELOPMENT	$29.49
LIBRARY	$28.43

1. See Appendix for calculation of per capita multipliers.

FISCAL YEAR ($s x1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034
CITY DIRECT COSTS										
POLICE DEPARTMENT COSTS										
RESIDENTIAL	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596
NON-RESIDENTIAL RETAIL	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
NON-RESIDENTIAL INDUSTRIAL	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
OTHER NON-RESIDENTIAL	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
TOTAL, POLICE DEPARTMENT COSTS	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596
FIRE DEPARTMENT COSTS										
RESIDENTIAL	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990
NON-RESIDENTIAL RETAIL	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
NON-RESIDENTIAL INDUSTRIAL	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
OTHER NON-RESIDENTIAL	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
TOTAL, FIRE DEPARTMENT COSTS	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990	$90.990
PUBLIC WORKS COSTS										
PAVEMENT MAINTENANCE	$2.750	$2.750	$2.750	$2.750	$2.750	$2.750	$2.750	$2.750	$2.750	$2.750
STREET SWEEPING	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005	$0.005
TRAFFIC SIGNAL OPERATION	$5.560	$5.560	$5.560	$5.560	$5.560	$5.560	$5.560	$5.560	$5.560	$5.560
LANDSCAPE MAINTENANCE	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
PARK MAINTENANCE	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
STREET LIGHT MAINTENANCE	$0.250	$0.250	$0.250	$0.250	$0.250	$0.250	$0.250	$0.250	$0.250	$0.250
OPEN SPACE MAINTENANCE	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
TRAIL MAINTENANCE	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
STORM DRAIN MAINTENANCE	$0.019	$0.019	$0.019	$0.019	$0.019	$0.019	$0.019	$0.019	$0.019	$0.019
TOTAL, PUBLIC WORKS COSTS	$8.583	$8.583	$8.583	$8.583	$8.583	$8.583	$8.583	$8.583	$8.583	$8.583
COMMUNITY DEVELOPMENT										
RESIDENTIAL	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685
NON-RESIDENTIAL	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
TOTAL, COMMUNITY DEVELOPMENT	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685	$44.685
LIBRARY										
RESIDENTIAL	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075
NON-RESIDENTIAL	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
TOTAL, LIBRARY	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075	$43.075
CITY DIRECT COSTS										
RESIDENTIAL	$255.939	$255.939	$255.939	$255.939	$255.939	$255.939	$255.939	$255.939	$255.939	$255.939
NON-RESIDENTIAL	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596	$159.596
TOTAL, CITY DIRECT COSTS	$415.535	$415.535	$415.535	$415.535	$415.535	$415.535	$415.535	$415.535	$415.535	$415.535
CITY GENERAL GOVERNMENT COSTS										
RESIDENTIAL	$15.880	$15.880	$15.880	$15.880	$15.880	$15.880	$15.880	$15.880	$15.880	$15.880
NON-RESIDENTIAL	$9.902	$9.902	$9.902	$9.902	$9.902	$9.902	$9.902	$9.902	$9.902	$9.902
TOTAL, CITY GENERAL GOVERNMENT COSTS	$25.782	$25.782	$25.782	$25.782	$25.782	$25.782	$25.782	$25.782	$25.782	$25.782

SHADED CELLS ARE VARIABLE ASSUMPTIONS OR INPUTS UNIQUE TO THE PROJECT.

TABLE 7
CITY OF REDLANDS : MODEL
FISCAL IMPACT ANALYSIS DETAILED SUMMARY

FISCAL YEAR ($s x1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034	% OF TOTAL
ONGOING REVENUES											
SECURED PROPERTY TAXES											
RESIDENTIAL	$440	$440	$440	$440	$440	$440	$440	$440	$440	$440	76.08%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
UNSECURED PROPERTY TAXES											
RESIDENTIAL	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12	2.09%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
TRANSFER PROPERTY TAXES											
RESIDENTIAL	$12	$12	$12	$12	$12	$12	$12	$12	$12	$12	2.09%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
SALES TAXES											
RESIDENTIAL	$48	$48	$48	$48	$48	$48	$48	$48	$48	$48	8.24%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
MEASURE 'I' SALES TAXES											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
LOCAL TRANSPORTATION SALES TAXES											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
TRANSIENT OCCUPANCY TAX											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
FRANCHISE FEE REVENUES											
RESIDENTIAL	$25	$25	$25	$25	$25	$25	$25	$25	$25	$25	4.38%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
BUSINESS LICENSE REVENUES											
RESIDENTIAL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
OTHER TAXES											
RESIDENTIAL	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	2.85%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
OTHER REVENUES											
RESIDENTIAL	$11	$11	$11	$11	$11	$11	$11	$11	$11	$11	1.82%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
COMMUNITY DEVELOPMENT											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
LIBRARY											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
POLICE DEPARTMENT											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
POLICE - ANIMAL CONTROL											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
POLICE - RECREATION											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
POLICE - SENIOR SERVICES											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
FIRE											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
PUBLIC WORKS											
RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
INVESTMENT INCOME REVENUES											
RESIDENTIAL	$14	$14	$14	$14	$14	$14	$14	$14	$14	$14	2.44%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
TOTAL RESIDENTIAL REVENUES	$578	$578	$578	$578	$578	$578	$578	$578	$578	$578	100.00%
TOTAL NON-RESIDENTIAL REVENUES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
TOTAL ON-GOING REVENUES	$578	$578	$578	$578	$578	$578	$578	$578	$578	$578	
ONGOING COSTS											
POLICE DEPARTMENT COSTS											
RESIDENTIAL	$160	$160	$160	$160	$160	$160	$160	$160	$160	$160	42.82%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
FIRE DEPARTMENT COSTS											
RESIDENTIAL	$91	$91	$91	$91	$91	$91	$91	$91	$91	$91	24.41%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
PUBLIC WORKS DEPARTMENT COST											
RESIDENTIAL	$9	$9	$9	$9	$9	$9	$9	$9	$9	$9	2.30%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
GENERAL GOVERNMENT COSTS											
RESIDENTIAL	$16	$16	$16	$16	$16	$16	$16	$16	$16	$16	4.26%
NON-RESIDENTIAL	$10	$10	$10	$10	$10	$10	$10	$10	$10	$10	2.66%
COMMUNITY DEVELOPMENT COSTS											
RESIDENTIAL	$45	$45	$45	$45	$45	$45	$45	$45	$45	$45	11.99%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
LIBRARY COSTS											
RESIDENTIAL	$43	$43	$43	$43	$43	$43	$43	$43	$43	$43	11.56%
NON-RESIDENTIAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00%
TOTAL RESIDENTIAL COSTS	$363	$363	$363	$363	$363	$363	$363	$363	$363	$363	97.34%
TOTAL NON-RESIDENTIAL COSTS	$10	$10	$10	$10	$10	$10	$10	$10	$10	$10	2.66%
TOTAL ON-GOING COSTS	$373	$373	$373	$373	$373	$373	$373	$373	$373	$373	
ANNUAL RESIDENTIAL ONGOING SURPLUS/(DEFICIT)	$216	$216	$216	$216	$216	$216	$216	$216	$216	$216	
ANNUAL NON-RESIDENTIAL ONGOING SURPLUS/(DEFICIT)	($10)	($10)	($10)	($10)	($10)	($10)	($10)	($10)	($10)	($10)	
TOTAL ANNUAL ONGOING SURPLUS/(DEFICIT)	$206	$206	$206	$206	$206	$206	$206	$206	$206	$206	
ANNUAL RESIDENTIAL REVENUE/COST RATIO	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	
ANNUAL NON-RESIDENTIAL REVENUE/COST RATIO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL ANNUAL REVENUE/COST RATIO	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	

TABLE 8a
LAND USE SUMMARY:
FISCAL IMPACT ANALYSIS SUMMARY (Residential Only))

FISCAL YEAR ($s x1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034
ONGOING REVENUES										
TOTAL RESIDENTIAL REVENUES	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768
ONGOING COSTS										
TOTAL RESIDENTIAL COSTS	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084
ANNUAL RESIDENTIAL ONGOING SURPLUS/(DEFICIT)	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684
ANNUAL RESIDENTIAL REVENUE/COST RATIO	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59

TABLE 8b
LAND USE SUMMARY:
FISCAL IMPACT ANALYSIS SUMMARY (Commercial Only)

FISCAL YEAR ($s x1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034
ONGOING REVENUES										
TOTAL NON-RESIDENTIAL REVENUES	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
ONGOING COSTS										
TOTAL NON-RESIDENTIAL COSTS	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020
ANNUAL NON-RESIDENTIAL ONGOING SURPLUS/(DEFICIT)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)
ANNUAL NON-RESIDENTIAL REVENUE/COST RATIO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE 8c
CITY OF REDLANDS : MODEL
FISCAL IMPACT ANALYSIS SUMMARY (MIXED)

FISCAL YEAR ($s x1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034	% OF TOTAL
ONGOING REVENUES											
TOTAL RESIDENTIAL REVENUES	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	100.00%
TOTAL NON-RESIDENTIAL REVENUES	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	0.00%
TOTAL ON-GOING REVENUES	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	$578.3768	
ONGOING COSTS											
TOTAL RESIDENTIAL COSTS	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	$362.8084	97.34%
TOTAL NON-RESIDENTIAL COSTS	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	$9.9020	2.66%
TOTAL ON-GOING COSTS	$372.7104	$372.7104	$372.7104	$372.7104	$372.7104	$372.7104	$372.7104	$372.7104	$372.7104	$372.7104	
ANNUAL RESIDENTIAL ONGOING SURPLUS/(DEFICIT)	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	$215.5684	
ANNUAL NON-RESIDENTIAL ONGOING SURPLUS/(DEFICIT)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	($9.9020)	
TOTAL ANNUAL ONGOING SURPLUS/(DEFICIT)	$205.6664	$205.6664	$205.6664	$205.6664	$205.6664	$205.6664	$205.6664	$205.6664	$205.6664	$205.6664	
ANNUAL RESIDENTIAL REVENUE/COST RATIO	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	
ANNUAL NON-RESIDENTIAL REVENUE/COST RATIO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL ANNUAL REVENUE/COST RATIO	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	

TABLE 9
CITY OF REDLANDS : MODEL
SCHOOL FEE MITIGATION (SB 50)
FISCAL IMPACT ANALYSIS

RESIDENTIAL SCHOOL FEE MITIGATION

DEVELOPER FEE REVENUE PER SINGLE FAMILY DETACHED UNIT /1	$3,113
DEVELOPER FEE REVENUE PER MULTI-FAMILY ATTACHED UNIT /2	$1,431
DEVELOPER FEE REVENUE PER MOBILE HOME /3	$1,212

STUDENT GENERATION FACTORS

ELEMENTARY SCHOOL	
SFD	0.2260
MFA	0.1362
Mobile Home	0.1068
MIDDLE SCHOOL	
SFD	0.1310
MFA	0.0574
Mobile Home	0.0548
HIGH SCHOOL	
SFD	0.1690
MFA	0.0565
Mobile Home	0.0493

SCHOOL DIST

	Capacity	Acreage	SBE 50 fees
Elementary	600	10	$5,200
Middle School	1000	20	$5,500
High School	2200	50	$7,200

FISCAL YEAR ($s ×1,000) end of:	YEAR 1 2025	YEAR 2 2026	YEAR 3 2027	YEAR 4 2028	YEAR 5 2029	YEAR 6 2030	YEAR 7 2031	YEAR 8 2032	YEAR 9 2033	YEAR 10 2034	TOTAL
CITY OF REDLANDS											
ANNUAL PROJECTED RESIDENTIAL DEVELOPMENT											
SFD	18	0	0	0	0	0	0	0	0	0	18
MFA	523	0	0	0	0	0	0	0	0	0	523
Mobile Home	0	0	0	0	0	0	0	0	0	0	0
STUDENT PROJECTIONS											
ELEMENTARY											
SFD	4.068	0	0	0	0	0	0	0	0	0	4
MFA	71.2326	0	0	0	0	0	0	0	0	0	71
Mobile Home	0	0	0	0	0	0	0	0	0	0	0
MIDDLE SCHOOL											
SFD	2.358	0	0	0	0	0	0	0	0	0	2
MFA	30.0202	0	0	0	0	0	0	0	0	0	30
Mobile Home	0	0	0	0	0	0	0	0	0	0	0
HIGH SCHOOL											
SFD	3.042	0	0	0	0	0	0	0	0	0	3
MFA	29.5495	0	0	0	0	0	0	0	0	0	30
Mobile Home	0	0	0	0	0	0	0	0	0	0	0
ANNUAL SCHOOL FEE MITIGATION											
ELEMENTARY											
SFD	$21,154	$0	$0	$0	$0	$0	$0	$0	$0	$0	
MFA	$370,410	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Mobile Home	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
									Total	$391,563	
MIDDLE SCHOOL											
SFD	$12,969	$0	$0	$0	$0	$0	$0	$0	$0	$0	
MFA	$165,111	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Mobile Home	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
									Total	$178,080	
HIGH SCHOOL											
SFD	$21,902	$0	$0	$0	$0	$0	$0	$0	$0	$0	
MFA	$212,756	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Mobile Home	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
									Total	$234,659	
TOTAL SCHOOL FEE MITIGATION											
SFD	$56,025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$56,025
MFA	$748,277	$0	$0	$0	$0	$0	$0	$0	$0	$0	$748,277
Mobile Home	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL	$804,302	$0	$0	$0	$0	$0	$0	$0	$0	$0	

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION



THE NEIGHBORHOODS AT LUGONIA VILLAGE PROJECT

CITY OF REDLANDS

SAN BERNARDINO COUNTY, CALIFORNIA

LSA

December 2023

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INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE PROJECT

CITY OF REDLANDS

SAN BERNARDINO COUNTY, CALIFORNIA

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LSA

December 2023

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	average daily traffic
af	acre-feet
afy	acre-feet per year
AMTP	Archaeological Monitoring and Treatment Plan
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
bgs	below ground surface
BMP	Best Management Practice
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
California Register	California Register of Historical Resources
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
cf	cubic feet
CFR	Code of Federal Regulations
CH_4	methane
CIRP	Inventory of Rare and Endangered Plants of California
City	City of Redlands

CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COA	Condition of Approval
CPTED	Crime Prevention through Environmental Design
CPUC	California Public Utilities Commission
CRMP	Cultural Resource Management Plan
DA	drainage area
dB	decibel
dBA	A-weighted decibel
DCV	Design Capture Volume
DIF	Development Impact Fee
DTSC	Department of Toxic Substances Control
du/ac	dwelling units per acre
EIR	Environmental Impact Report
EMFAC2021	CARB Emissions Factor 2021 Model
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ESA	Environmentally Sensitive Area
EV/SD	East Valley Corridor Specific Plan/Special Development District
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gas

GPA	General Plan Amendment
gpd	gallons per day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HSC	Health and Safety Code
HVAC	heating, ventilation, and air conditioning
I-10	Interstate 10
IEPR	Integrated Energy Policy Report
in/sec	inches per second
IPaC	Information for Planning and Consultation
IS	Initial Study
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	day-night average noise level
LDR	Low-Density Residential
L_{eq}	equivalent continuous sound level
LID	Low Impact Development
L_{max}	maximum instantaneous noise level
L_{min}	minimum measured sound level
LOS	level(s) of service
LRA	Local Responsibility Area
LST	Localized Significance Threshold
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MLD	Most Likely Descendant
MM	Mitigation Measure
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone

MS4	Municipal Separate Storm Sewer System
MT	metric ton(s)
MT CO_2e	metric tons of carbon dioxide equivalent
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
ND	Negative Declaration
NO_2	nitrogen dioxide
NOI	Notice of Intent
Non-VHFHSZ	Non-Very High Fire Hazard Severity Zone
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
Pb	lead
PCC	plain cement concrete
PCE	passenger car equivalent
PM_{10}	particulate matter less than 10 microns in size
$PM_{2.5}$	particulate matter less than 2.5 microns in size
POTWs	publicly owned treatment works
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PRDs	Permit Registration Documents
PRIMP	Paleontological Resources Impact Mitigation Program
Project, proposed Project	Neighborhoods at Lugonia Village Project
REC	recognized environmental condition
RFD	Redlands Fire Department
RHNA	Regional Housing Needs Assessment
RMS	root-mean-square

ROG	reactive organic gas
RPD	Redlands Police Department
RPS	Renewables Portfolio Standard
RSL	Regional Screening Level
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RUSD	Redlands Unified School District
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
sf	square foot/feet
SGMA	Sustainable Groundwater Management Act
SLF	Sacred Lands File
SMARTS	Stormwater Multiple Application and Report Tracking System
SO_2	sulfur dioxide
SoCalGas	Southern California Gas Company
SO_x	sulfur oxides
SR-210	State Route 210
SR-330	State Route 330
SR-38	State Route 38
SRA	Source Receptor Area
SSC	Species of Special Concern
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
THPO	Tribal Historic Preservation Officer

TMDL	Total Maximum Daily Load
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VdB	vibration velocity decibels
VEC	vapor encroachment condition
VMT	vehicle miles traveled
VOC	volatile organic compound
WDID	Waste Discharge Identification Number
WDR	Waste Discharge Requirement
WL	Watch List
WQMP	Water Quality Management Plan

1.0 INTRODUCTION AND PURPOSE

1.1 INTRODUCTION

Chapter 1.0 of this Initial Study (IS) describes the purpose, environmental authorization, the intended uses of the IS, documents incorporated by reference, and the processes and procedures governing the preparation of the environmental document. Pursuant to Section 15367 of the State of California *Guidelines for Implementation of the California Environmental Quality Act* (*CEQA Guidelines*), the City of Redlands (City) is the Lead Agency under the California Environmental Quality Act (CEQA). The City has primary responsibility for compliance with CEQA and consideration of the Neighborhoods at Lugonia Village Project (herein referred to as "Project" or "proposed Project").

The IS is organized as follows:

Chapter 1.0 *Introduction and Purpose* provides a discussion of the Initial Study's purpose, focus, and legal requirements.

Chapter 2.0 *Project Description* provides a detailed description of the proposed Project.

Chapter 3.0 *Initial Study Checklist* includes a checklist and accompanying analyses of the Project's effect on the environment. For each environmental issue, the analysis identifies the level of the Project's environmental impact.

Chapter 4.0 *References* details the references cited throughout the document.

Appendices Include the technical material prepared to support the analyses contained in the IS.

1.2 PURPOSE

CEQA requires that the proposed Project be reviewed to determine the environmental effects that would result if the Project were approved and implemented. The City is the Lead Agency and has the responsibility for preparing and adopting the associated environmental document prior to consideration of the approval of the proposed Project. The City has the authority to make decisions regarding discretionary actions relating to implementation of the proposed Project.

This IS has been prepared in accordance with the relevant provisions of CEQA (California Public Resources Code Section 21000 et seq.), the *CEQA Guidelines,*[1] and the rules, regulations, and procedures for implementing CEQA as adopted by the City. The objective of the IS is to inform City decision-makers, representatives of other affected/responsible agencies, the public, and interested parties of the potential environmental consequences of the Project.

As established in *CEQA Guidelines* Section 15063(c), the purposes of an IS are to:

- Provide the Lead Agency (City of Redlands) with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND);

[1] California Code of Regulations, Title 14, Chapter 3, Sections 15000 through 15387.

- Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for an ND or MND;
- Assist in the preparation of an EIR, if one is required;
- Facilitate environmental assessment early in the design of a project;
- Provide a factual basis for finding in an ND or MND that a project will not have a significant effect on the environment;
- Eliminate unnecessary EIRs; and
- Determine whether a previously prepared EIR could be used with the project.

1.3 INTENDED USE OF THIS INITIAL STUDY

The City formally initiated the environmental process for the proposed Project with the preparation of this IS. The IS screens out those impacts that would be less than significant and do not warrant mitigation, while identifying those issues that require further mitigation to reduce impacts to a less than significant level. As identified in the following analyses, Project impacts related to various environmental issues either do not occur, are less than significant (when measured against established significance thresholds), or have been rendered less than significant through implementation of mitigation measures. Based on these analytical conclusions, this IS supports adoption of an MND for the proposed Project.

CEQA[2] permits the incorporation by reference of all or portions of other documents that are generally available to the public. The IS has been prepared utilizing information from City planning and environmental documents, technical studies specifically prepared for the Project, and other publicly available data. The documents utilized in the IS are identified in Section 3.0 and are hereby incorporated by reference. These documents are available for review at the City of Redlands, Planning Division.

1.4 PUBLIC REVIEW OF THE INITIAL STUDY

The IS and a Notice of Intent (NOI) to adopt an MND will be distributed to responsible and trustee agencies, other affected agencies, and other parties for a 30-day public review period. Written comments regarding this IS should be addressed to:

Ryan Murphy, Senior Planner
City of Redlands
35 Cajon Street, Suite 20
P.O. Box 3005
Redlands, CA 92373
rmurphy@cityofredlands.org

After the 30-day public review period, consideration of comments raised during the public review period will be taken into account and addressed prior to adoption of the MND by the City.

[2] *CEQA Guidelines* Section 15150.

2.0 PROJECT DESCRIPTION

This chapter describes the proposed Neighborhoods at Lugonia Village Project (Project) submitted by Redlands Summit LLC (Applicant) that is evaluated in this Initial Study/Mitigated Negative Declaration (IS/MND). The proposed Project includes the development of an approximately 24.4-acre property (Project site) northwest of West Lugonia Avenue and Karon Street that consists of three undeveloped parcels (Assessor Parcel Numbers 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000). The Project site is located on the northwest corner of West Lugonia Avenue and Karon Street in the northern portion of the City of Redlands (City). The Applicant proposes to develop the Project site with 451 apartment units, 72 townhomes, and 18 single-family detached homes, for a total of 541 units.

Pursuant to Section 15124(c) of the *CEQA Guidelines*, this chapter includes a description of the proposed Project's location, objectives, and technical and environmental characteristics, which is followed by a summary of the intended uses of the IS/MND, a list of required permits and other approvals required to implement the Project, and a list of related environmental review and consultation requirements required by federal, State, and local laws, regulations, or policies.

2.1 PROJECT LOCATION

The following describes the precise location and boundaries of the Project site, including its geographic context, and provides a brief overview of the existing land uses within and in the vicinity of the Project site.

2.1.1 Regional Location and Access

The approximately 24.4-acre Project site is located on the northwest corner of West Lugonia Avenue and Karon Street in the northern area of the City of Redlands, San Bernardino County, California. The Project site is generally bounded by West Lugonia Avenue to the south, Karon Street to the east, a dirt road to the north, and fallow agricultural land to the west. **Figure 1: Regional Location** shows the location of the Project site within the region.

The Project site is located approximately 0.2 mile east of State Route 210 (SR-210) and approximately 0.4 mile north of Interstate 10 (I-10). The City of Loma Linda is located southwest of Redlands, the City of Highland is located to the north, and the City of San Bernardino is located to the west. The City of Yucaipa is located to the east over the foothills of the San Bernardino Mountains. The San Bernardino International Airport is located approximately 2.4 miles northwest of the Project site, west of SR-210.

Regional access to the Project site is provided by I-10 and SR-210. The Project site is directly accessible via West Lugonia Avenue and Karon Street.

2.1.2 Site Characteristics and Current Site Conditions

The Project site is currently undeveloped, generally rectangular in shape, and generally flat. Conditions on the site generally consist of disturbed vegetation, a few palm trees, and power utility poles. An open concrete irrigation canal runs parallel to the Project site's northern boundary, and the remnants of a second north-south irrigation canal cuts through the Project site. A dirt road along the northern boundary of the Project site provides a connection from Pennsylvania Avenue to Tennessee Street, west of the

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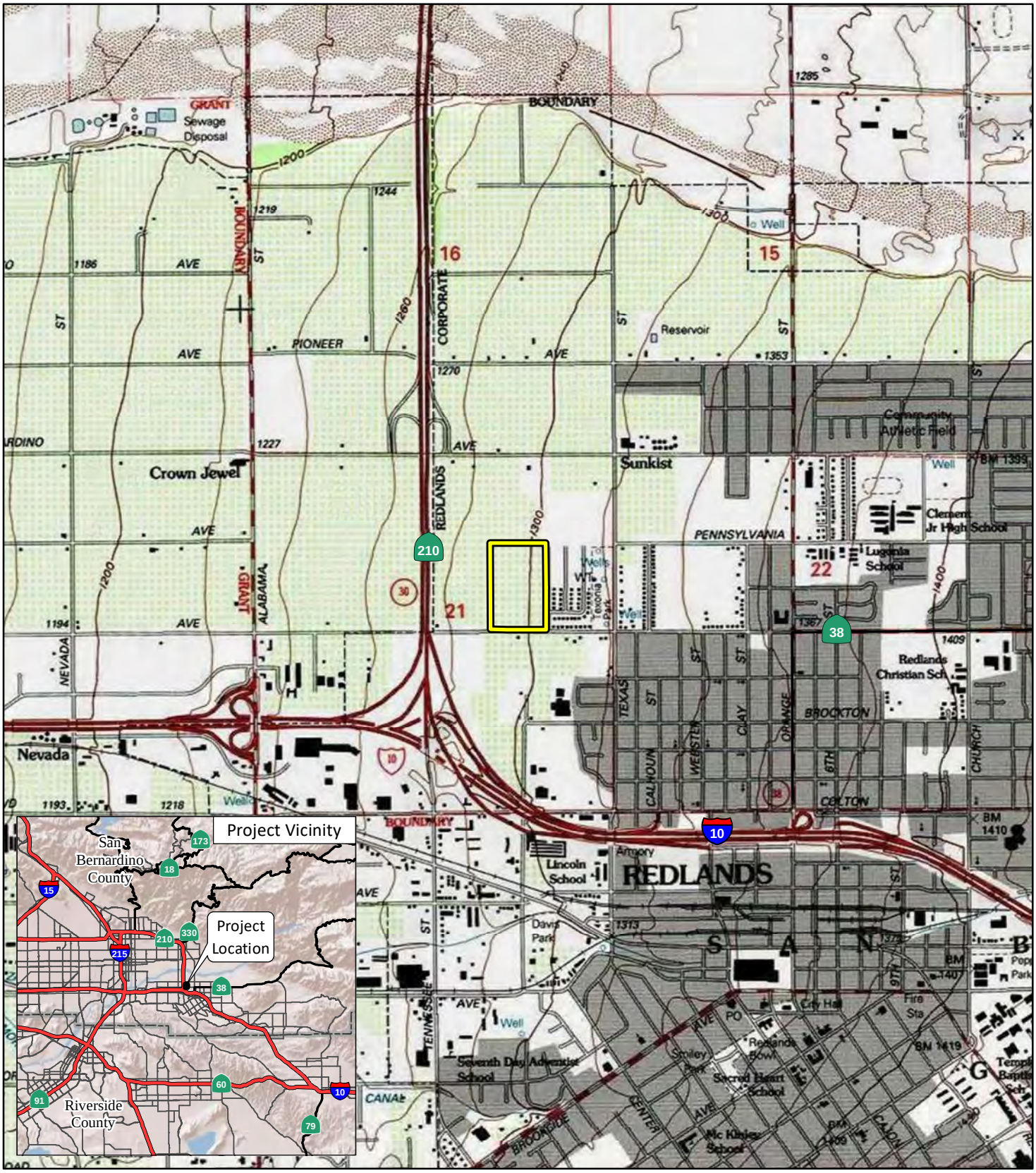

LSA

LEGEND

Project Site

FIGURE 1

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SOURCE: USGS 7.5' Quad - Redlands (1988), CA

The Neighborhoods at Lugonia Village

Regional Location

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Project site. An informal dirt walking path is located along the Project site's southern boundary, adjacent to West Lugonia Street. **Figure 2: Project Location** depicts an aerial view of the Project site.

2.1.3 General Plan and Zoning

The Project site's current zoning designation is East Valley Corridor Specific Plan/Special Development District (EV/SD). The purpose of the East Valley Corridor Specific Plan is to plan for large undeveloped areas along I-10 to facilitate future industrial, commercial, and residential development in an orderly and aesthetic manner, provide a strong job base to support the local economy, and to ensure high-quality development through design guidelines and standards. The intent of the Special Development District is to provide an alternative, more flexible site planning process which encourages creative and imaginative planning of administrative, professional, commercial or industrial, or mixed-use development within the framework of a single comprehensive plan. Single-family dwelling units on parcels of 20 acres or more are permitted as interim uses under the current EV/SD zoning. The EV/SD zoning does not permit, conditionally permit, or permit as an accessory use, higher residential densities. A zoning change from EV/SD to R-3 Multiple Family Residential will be required to permit the proposed densities of the proposed Project's apartment complex and townhomes (27.2 units per gross acre), and a zoning change from EV/SD to R-1 Single Family Residential along Karon Street will be required to permit the proposed densities of the single-family detached residences (5.33 dwelling units per gross acre).

The City's General Plan currently designates most of the Project site as Commercial, which may permit residential and mixed uses consistent with the underlying zoning district. The Project site is also partly designated as Parks/Golf Courses and Low Density Residential, the latter of which allows for the development of detached single-family dwellings at densities up to 6 dwelling units per acre on slopes up to 15 percent. The portion of the Project site designated as Low Density Residential is located directly adjacent to Karon Street. A General Plan Amendment (GPA) to change the designation from Commercial and Parks/Golf Courses to High Density Residential will be required to permit the proposed higher housing densities of the proposed Project's apartment complex and townhomes.[3] Development within the City, including the Project site, is regulated by the City of Redlands's Citywide Design Guidelines (Design Guidelines).

2.1.4 Surrounding Land Uses

The Project site is bordered by West Lugonia Avenue to the south, Karon Street and an existing residential community to the east, a dirt road and fallow agricultural land to the north, and fallow agricultural land to the west followed by Tennessee Street and SR-210. **Table A: Surrounding Land Uses and Setting** summarizes the existing land uses, General Plan designations, and zoning designations on the Project site and surrounding properties.

[3] No proposed development project with density levels in excess of 18 dwelling units to the acre or a structure in excess of 35 feet in height shall be approved unless specific mandatory findings are made, and the development project is approved by four-fifths vote of the total authorized membership of the City Council. (*Redlands General Plan 2035*. Page 4-10.)

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LEGEND

Project Site

FIGURE 2

N

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SOURCE: Maxar Imagery (2023)

The Neighborhoods at Lugonia Village

Project Location

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Table A: Surrounding Land Uses and Setting

Direction	Existing Land Use	General Plan Designation		Zoning Designation	
Project Site	Undeveloped, Vacant	**Existing**	**Proposed**	**Existing**	**Proposed**
		Commercial (C), Parks/Golf Courses (PG), Low Density Residential (LDR)	High Density Residential (HDR) and Low Density Residential (LDR)	East Valley Corridor Specific Plan/Special Development (EV/SD)	Multiple Family Residential District (R-3) and Single-Family Residential (R-1)
North	Undeveloped, Vacant	Commercial (C)		Concept Plan 4 (CP4)	
East	Single-Family Residential	Low Density Residential (LDR)		Single Family Residential District (R-1)	
South	Commercial, Undeveloped, Vacant	Commercial (C)		East Valley Corridor Specific Plan/ General Commercial (EV/CG), Agricultural District 1 (A-1)	
West	Undeveloped, Vacant	Commercial (C)		East Valley Specific Plan/Special Development (EV/SD)	

Source: City of Redlands. April 11, 2022. Redlands General Plan Land Use Map. https://www.cityofredlands.org/sites/main/files/file-attachments/generalplan2035.pdf?1649693557 (accessed October 27, 2023).
Source: City of Redlands. April 11, 2022. City of Redlands – Zoning Map. https://www.cityofredlands.org/sites/main/files/file-attachments/zoning.pdf?1649714270 (accessed October 27, 2023).

2.2 PROPOSED PROJECT

2.2.1 Overall Development Concept

The proposed Project includes the subdivision of the Project site into three parcels in order to facilitate the development of an apartment complex neighborhood, a townhome neighborhood (collectively, the apartment complex and townhomes are referred to as Neighborhood A), and a neighborhood of single-family detached homes (Neighborhood B) on the Project site. The detached single-family homes would be located on Parcel 1, the townhomes neighborhood would be located on Parcel 2, and the apartment complex neighborhood would be located on Parcel 3. **Figure 3: Tentative Parcel Map** shows the proposed subdivision of the Project site. The proposed Project also includes the approval of a Tentative Tract Map, shown in **Figure 4: Tentative Tract Map**, for the 18 single-family residential parcels along Karon Street as well as a neighborhood park at the southwest corner of Pennsylvania Avenue and Karon Street.

The proposed Project includes the construction of 451 apartment units, 72 townhome units, and 18 single family residences, for a total of 541 residential units. Of the 451 apartment units, 27 would be very low-income units. The remaining apartment, townhome, and single-family residential units are expected to be sold at market rate (the above-moderate income level). The apartment complex and townhome neighborhood would have a proposed density of 27.2 dwelling units per acre (du/ac), and the neighborhood or single-family dwellings would have a proposed density of 5.33 du/ac. **Figure 5: Master Site Plan** provides the proposed boundaries of the apartment units, townhomes units, and single-family residences. The proposed Project would also include a small parklet at the northeastern corner of the Project site.

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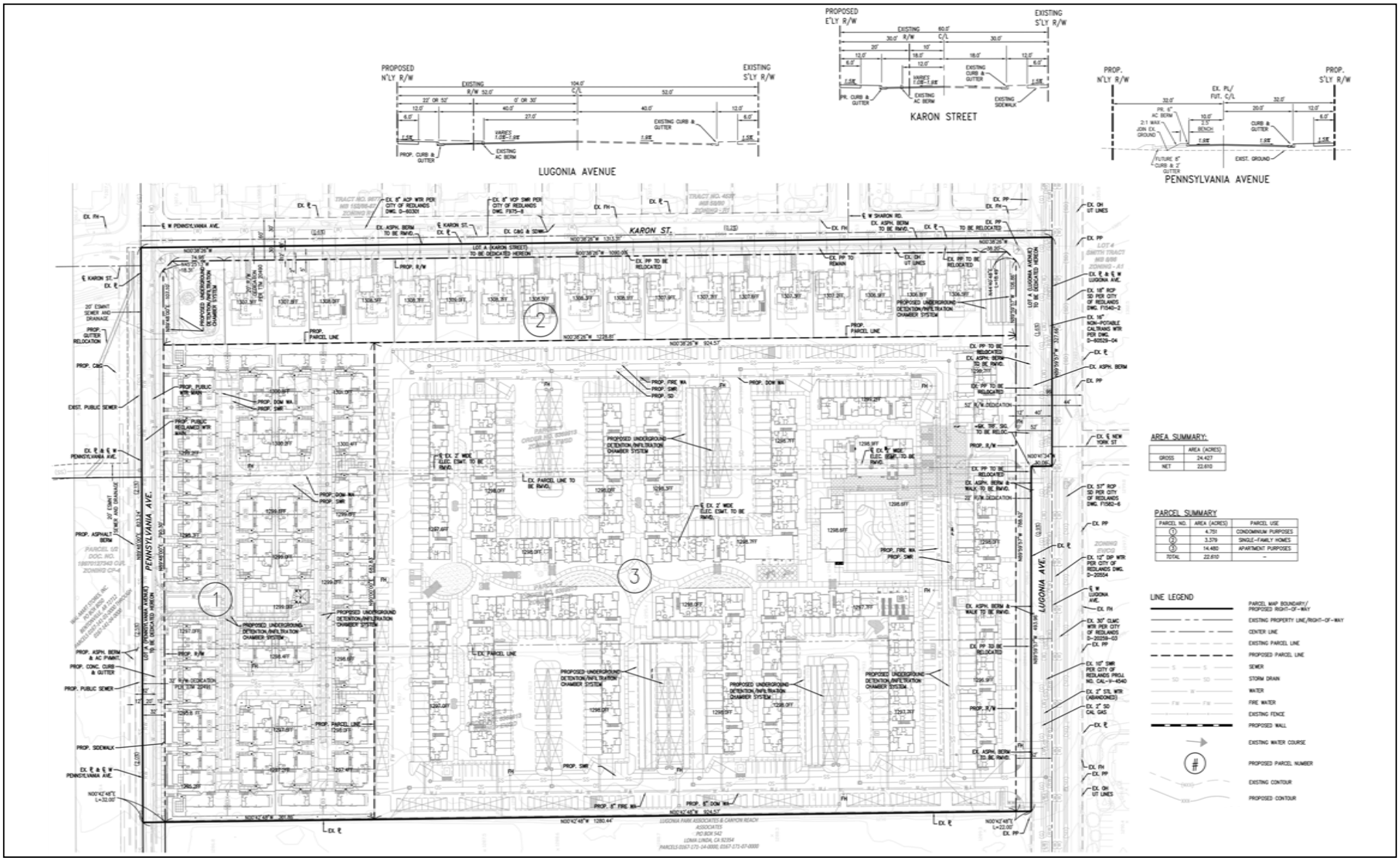

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FIGURE 3

0 110 220
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SOURCE: AO Group
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The Neighborhoods at Lugonia Village
Tentative Parcel Map

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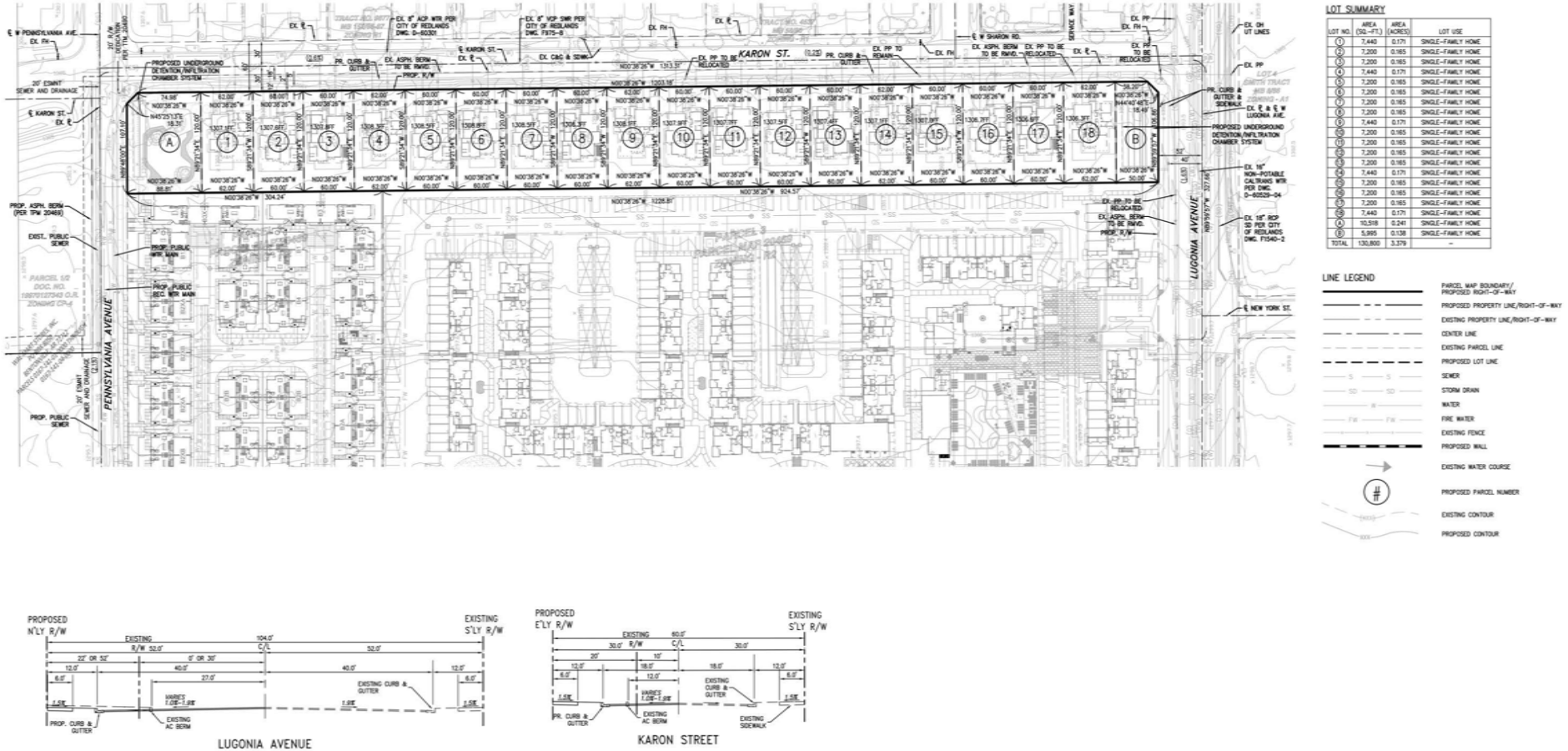

LSA

FIGURE 4

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SOURCE: DRC Engineering

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The Neighborhoods at Lugonia Village

Tentative Tract Map

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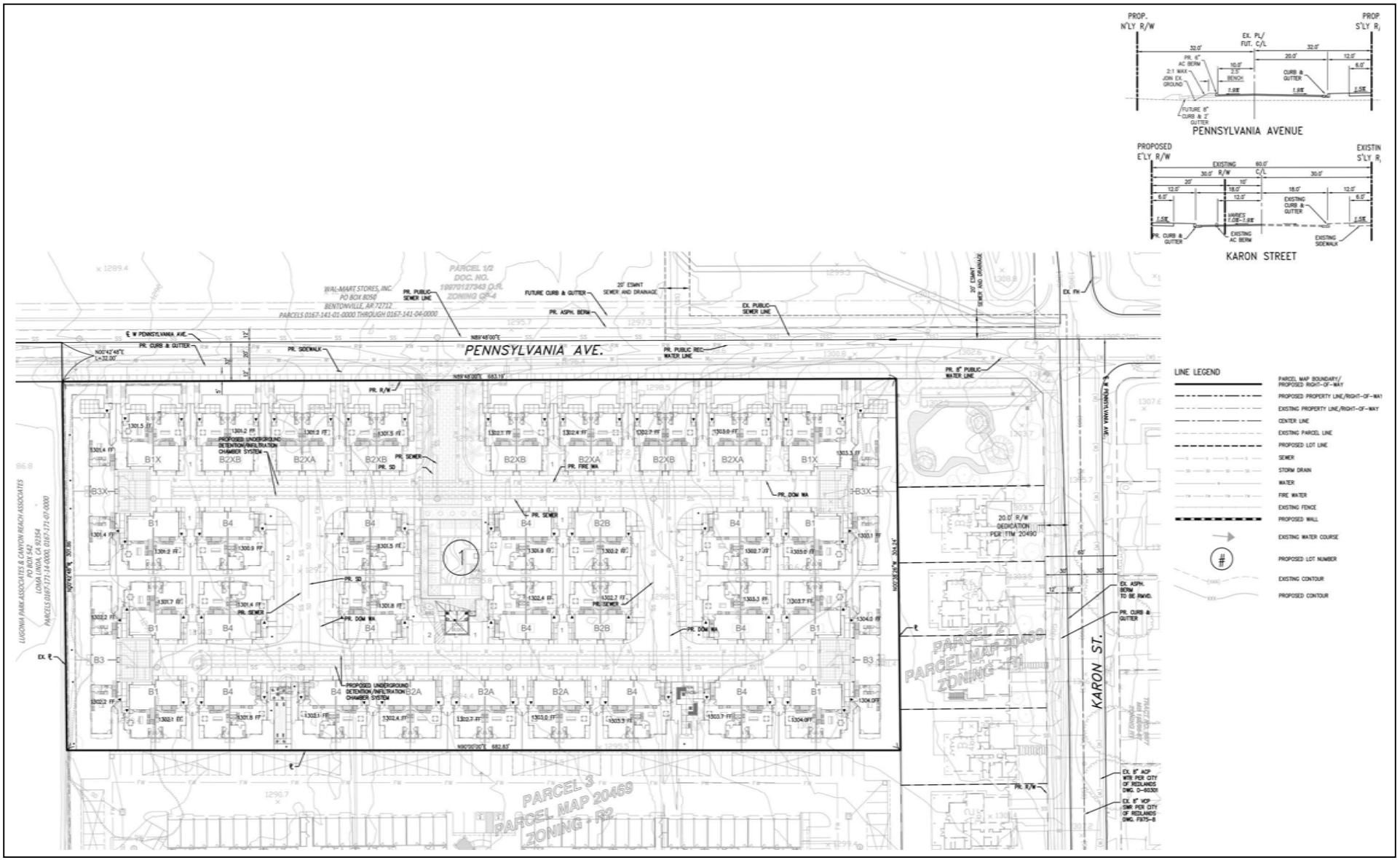

FIGURE 4

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SOURCE: DRC Engineering
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The Neighborhoods at Lugonia Village

Tentative Tract Map

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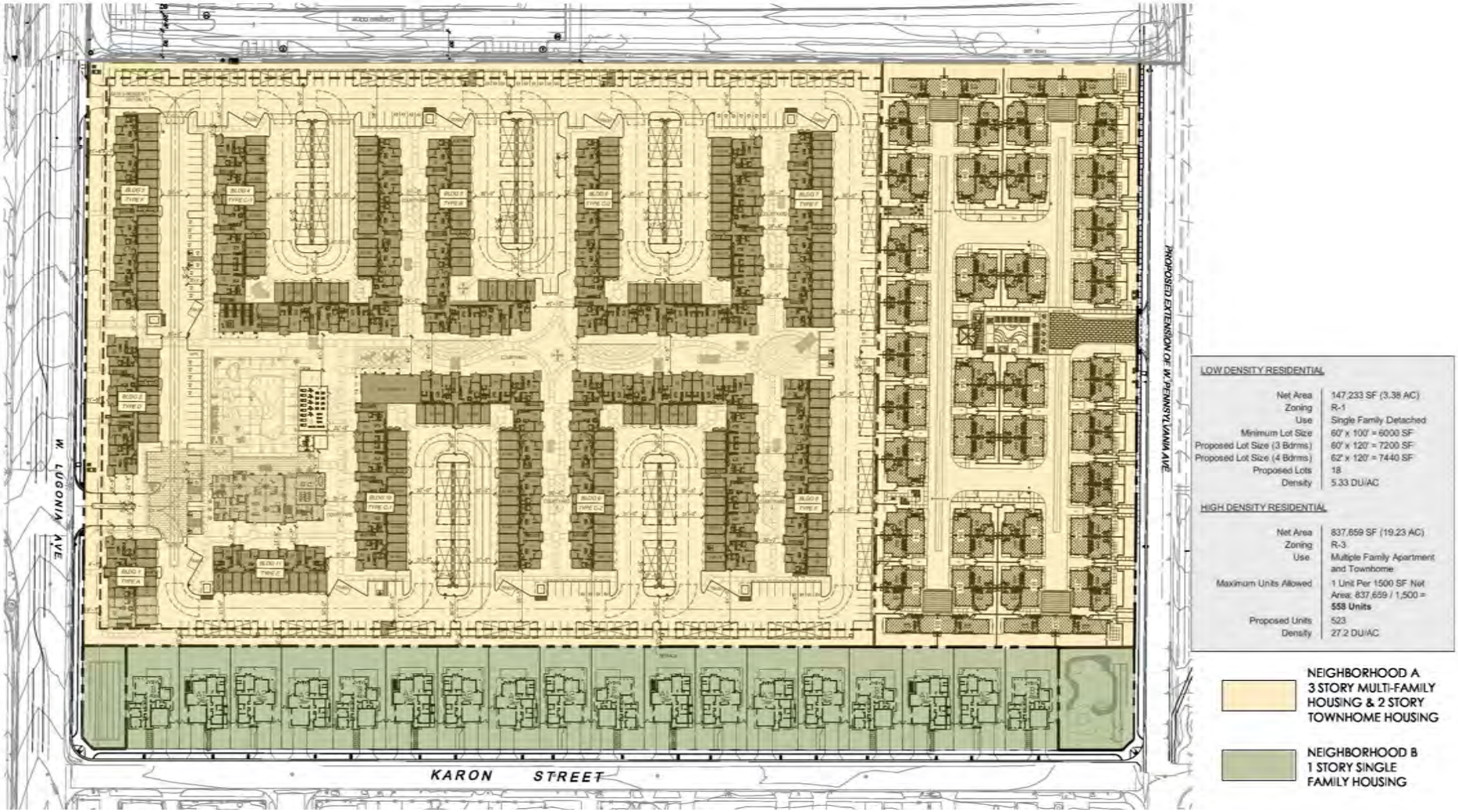

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FIGURE 5

0 85 170
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SOURCE: AO Group
I:\CRX2202\G\Site_Plan.ai (10/26/2023)

The Neighborhoods at Lugonia Village
Master Site Plan

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In addition to the proposed residential communities, the proposed Project would construct an extension of Pennsylvania Avenue along the northern edge of the Project site. The Pennsylvania Avenue extension would either end in a cul-de-sac (Scenario A) or connect to the existing Pennsylvania Avenue and residential community to the east (Scenario B).

The proposed apartment complex neighborhood would include a clubhouse and fitness center, a pool area, a kids club, a mail room, a fenced dog park, and a series of greenbelts that feature decorative walkways, fire pits, and BBQ grills. The proposed townhome neighborhood would include a central recreation building with an entertainment courtyard and pool as well as two pocket parks that would feature BBQ grills and fire pits. The single-family residential neighborhood would include a neighborhood park at the southwest corner of Pennsylvania Avenue and Karon Street. **Figure 6: Tentative Landscape Plan** provides an illustrative view of the proposed open space layout and the locations of proposed amenities.

The discretionary actions required for the Project include issuance of a Conditional Use Permit, approval of a Tentative Tract Map, approval of a Tentative Parcel Map, and the related actions listed below in Required Actions.

2.2.2 Construction and Phasing

Project construction would include site preparation, installation of utilities, paving, building construction, landscaping, architectural coating, and paving activities. The proposed Project would be constructed over 31 months, with construction anticipated to begin in April 2024. Construction activities are anticipated to occur between the hours of 7:00 a.m. and 5:00 p.m. Monday through Saturday. This is consistent with the City's Noise Ordinance, which prohibits operation of construction equipment between weekday hours of 6:00 p.m. and 7:00 a.m.

The preliminary Project construction phasing is presented below in **Table B: Preliminary Project Construction Phasing.**

Table B: Preliminary Project Construction Phasing

Phase	Begin Date	End Date
Grading	June 1, 2025	August 1, 2025
Building Construction	August 2, 2025	January 11, 2028
Paving	November 26, 2027	January 11, 2028
Architectural Coating	October 12, 2025	January 11, 2028

Source: Michael Baker International. 2023. *Air Quality, Green House Gas, and Energy Technical Memorandum for the Proposed Neighborhoods at Lugonia Village – City of Redlands, County of San Bernardino, California, Appendix A: Air Quality/Greenhouse Gas Emissions/Energy Data.* June 22.

2.2.3 Grading

The Project is anticipated to result in a balanced site, and no import or export of soil is anticipated.

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LSA

FIGURE 6

0 94 188
FEET

SOURCE: AO Architects
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The Neighborhoods at Lugonia Village
Tentative Landscape Plan

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2.2.4 Access, Circulation, and Parking

Vehicular access to the Project site would be provided via two driveways from West Lugonia Avenue (a signalized intersection at New York Street/West Lugonia Avenue and a right-in/right-out driveway on the southwest corner of the Project site), one driveway from the proposed Pennsylvania Avenue extension, and one driveway from Karon Street. As discussed above, the proposed Pennsylvania Avenue extension would either end in a cul-de-sac just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street or would extend from Karon Street west to Tennessee Street, creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street.

On-site parking within the apartment complex and townhome neighborhoods would be provided via a 26-foot-wide internal street system within each neighborhood. The apartment complex neighborhood would include 241 garage parking spaces, 325 carport spaces, 7 parallel parking spaces, 139 open stall parking spaces, and 32 electric vehicle charging spaces for a total of 744 parking spaces for residents. The townhome neighborhood would include 144 garage parking spaces for residents and 21 guest parking spaces for a total of 165 parking spaces. Each of the 18 single-family detached homes would include a 2-car garage, for a total of 36 parking spaces. Overall, the proposed Project would include a total of 945 parking spaces. The internal street system would also serve as a fire access system for first responders.

Figure 6 provides an illustrative view of the proposed landscape design, including the general locations of parkway and street tree plantings, the planned tree species mix, and the locations of proposed sidewalks and bike paths as well as the proposed recreation lawn and play area. As shown in **Figure 6,** pedestrian access within the Project site would be provided via internal walkways. A 6-foot-wide sidewalk would also be provided along West Lugonia Avenue, Pennsylvania Avenue, and Karon Street abutting the Project site.

2.2.5 Landscaping and Open Space

Based on the City of Redlands's Citywide Design Guidelines, the Project's proposed plant palette would be comprised of plant materials and trees known to thrive in the local climate and soil conditions. As described above, **Figure 6** provides a description of the tree species that are proposed to be planted. Proposed landscaping on the Project site would be consistent with the landscaping characteristics of surrounding residential neighborhoods and would complement the proposed development and surrounding area.

The Project proposes construction of an internal greenbelt area in the apartment complex that includes a 40-foot to 60-foot-wide linear east/west garden and a seating area framed by a central turf oval and trees. In addition, a 15-foot landscape easement would be established along the Project site boundary along West Lugonia Avenue.

The proposed Project would provide a total of 201,550 square feet (sf) of private open space in the apartment complex neighborhood. A total of 32,029 sf of open space would be provided in the townhome neighborhood.

The proposed Project would also provide a private open space parklet in the northeastern corner of the Project site, which would be used by residents of the proposed single-family neighborhood.

2.2.6 Design Elements

A distinct architectural style is proposed for the Project's residential buildings. The individual apartment buildings would not exceed 35 feet in height, the townhome buildings would not exceed 34 feet in height, and each single-family residential home would not exceed 20 feet in height. The architectural styles for each type of residential dwelling (apartment, townhome, and detached single-family unit) are presented in **Figure 7: Conceptual Architectural Renderings (5 sheets).**

2.2.7 Infrastructure and Utilities

The Project site is located in an urbanized area, and existing utilities and infrastructure are available for interconnection generally adjacent to or in close proximity to the site. The Project would require installation of the following utility connections to the satisfaction of the applicable utility providers: water, wastewater, stormwater drainage, electric, natural gas, and telecommunications services. Connections to existing utility infrastructure would occur within the adjacent public rights-of-way.

2.2.7.1 Water

Domestic water service to the Project site would be provided via existing lines beneath Karon Street and West Lugonia Avenue. The proposed Pennsylvania Avenue extension along the northern site boundary would include pipeline connections that would tie into the existing water line in Karon Street.

2.2.7.2 Wastewater

Sewer service to the Project site would be provided via lines that would connect to the existing 10-inch sewer line along West Lugonia Avenue and the existing 8-inch sewer line along Karon Street.

2.2.7.3 Stormwater

In its existing undeveloped condition, the Project site is covered entirely by pervious surfaces (1,064,038 sf) and is generally flat. The proposed Project would increase the impervious surface coverage on the Project site compared to existing conditions. Upon completion of the Project, a total of approximately 820,350 sf would be covered by impervious surfaces (80 percent of the Project site) and approximately 243,688 sf would be covered by pervious surfaces (20 percent of the Project site).

Because there are no storm drain connections available on the Project site, the overall drainage concept of the proposed Project is to reduce storm flows from the Project site through underground detention systems which would ultimately discharge the reduced flows onto the surrounding public streets. The apartment neighborhood would contain four separate underground detention chambers with a total storage volume of 94,800 cubic feet (cf). Storm flows from this underground detention/infiltration system would discharge reduced flows to Lugonia Avenue through a sidewalk culvert. The townhome neighborhood would contain two separate underground detention chambers with a total storage volume of 23,760 cf and would discharge reduced flows to the proposed Pennsylvania Avenue extension through a sidewalk culvert. The single-family neighborhood would contain two separate underground detention chambers, one for storm flows draining north towards Pennsylvania Avenue and the other for storm flows draining south to Lugonia Avenue. The underground detention chamber for storm flows draining north would have a total storage volume of 4,610 cf, and the underground detention chamber for southern drainage would have a total storage volume of 11,530 cf. Both underground detention systems would discharge reduced flows to the respective streets through a sidewalk culvert.



LSA

FIGURE 7.1

NOT TO SCALE

The Neighborhoods at Lugonia Village

Perspective From Lugonia Ave. - Main Entry

SOURCE: AO Architects

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LSA

FIGURE 7.2

NOT TO SCALE

The Neighborhoods at Lugonia Village

Perspective of Multi-Family Internal Courtyard

SOURCE: AO Architects

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LSA

FIGURE 7.3

NOT TO SCALE

The Neighborhoods at Lugonia Village

Perspective of Amenity Pool Area

SOURCE: AO Architects

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PENNSYLVANIA FRONT PATIOS

LSA

FIGURE 7.4

NOT TO SCALE

SOURCE: AO Architects

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The Neighborhoods at Lugonia Village

Perspective of Townhomes

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STREET VIEW FROM SOUTH-EAST @ KARON ST.



STREET VIEW FROM NORTH-EAST @ KARON ST.

LSA

FIGURE 7.5

NOT TO SCALE

SOURCE: AO Architects
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The Neighborhoods at Lugonia Village

Perspective of Single Family Neighborhood

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2.2.7.4 Electricity and Gas

Electrical service would be provided by Southern California Edison (SCE) through connections to the existing overhead lines along Karon Street and West Lugonia Avenue. Two power poles on Lugonia Avenue, one power pole at the corner of Lugonia Avenue and Karon Street, and two power poles on Karon Street would be removed or relocated as part of the proposed Project. All other existing power poles in the vicinity of the Project site would be protected in place. Natural gas service would be provided by the Southern California Gas Company (SoCalGas) through connections to the existing 2-inch line beneath West Lugonia Avenue.

2.2.7.5 Telecommunication

Telecommunication services would be provided by Verizon.

2.3 REQUIRED ACTIONS

While the City is the Lead Agency for the Project under CEQA, other agencies also have discretionary authority related to the Project and approvals or serve as a responsible and/or trustee agency in connection to the Project as established in *CEQA Guidelines* Section 15124(d)(2), "If a public agency must make more than one decision on a project, all its decisions subject to CEQA should be listed." A list of these agencies and potential permits and approvals that may be required is provided in **Table C: Potential Permits and Approvals.**

Table C: Potential Permits and Approvals

Lead Agency	Permits/Approvals
City of Redlands	• Approval of a 'Change in Zone' • Approval of a 'General Plan Amendment' • Approval of a 'Specific Plan Amendment' • Approval of a Conditional Use Permit for New Construction • Approval of Tentative Parcel Map No. 20469 • Approval of Tentative Tract Maps No. 20490 and 20491 • Commission Review and Approvals No. 940, 941, and 942 to approve the site plan, site improvements, landscaping plans, and architectural elevations for each portion of the Project • Environmental review
Other Agencies/Entities	
Redlands Fire Department	• Review/Approve fire truck access and site fire flow design
City of Redlands Building Division	• Issuance of Building Permits for new home construction
City of Redlands Municipal Utilities and Engineering Department	• Issuance of Final Map • Connection to water system • Connection to wastewater system
Southern California Edison and Southern California Gas Company	• Connection of electricity/natural gas service

Source: LSA (2022).

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3.0 INITIAL STUDY CHECKLIST

1. **Project Title:**
   The Neighborhoods at Lugonia Village Project

2. **Lead Agency Name and Address:**
   City of Redlands
   Development Services Department, Planning Division
   35 Cajon Street, Suite 20
   Post Office Box 3005
   Redlands, California 92373

3. **Contact Person and Phone Number:**
   Ryan Murphy, Senior Planner
   (909) 798-7555 ext. 7308
   rmurphy@cityofredlands.org

4. **Project Location:**
   The approximately 24.4-acre Project site is located on the northwest corner of West Lugonia Avenue and Karon Street in the northern area of the City of Redlands, San Bernardino County, California. The Project site is generally bounded by West Lugonia Avenue to the south, Karon Street to the east, a dirt road to the north, and fallow agricultural land to the west. **Figure 1: Regional Location** shows the location of the project site within the region.

5. **Project Sponsor's Name and Address:**
   Redlands Summit LLC
   2459 Huntington Drive
   San Marino, California 91108

6. **General Plan Designation:**
   Existing: Commercial, Parks/Golf Courses, Low Density Residential
   Proposed: High Density Residential, Low Density Residential

7. **Zoning:**
   Existing: East Valley Corridor Specific Plan/Special Development District
   Proposed: R-1 (Single Family Residential) and R-3 (Multiple Family Residential)

8. **Description of Property:**
   The Project site is currently undeveloped, generally rectangular in shape, and generally flat. Conditions on the site generally consist of disturbed vegetation, a few palm trees, and power utility poles. An open concrete irrigation canal runs parallel to the northern Project site boundary, and the remnants of a second north-south concrete irrigation canal cuts through the Project site. A dirt road along the northern boundary of the Project site provides a connection from Pennsylvania Avenue to Tennessee Street, west of the Project site. An informal dirt walking path is located along the southern Project site boundary, adjacent to West Lugonia Street. **Figure 2: Project Location** depicts an aerial view of the Project site.

9. Surrounding Land Uses and Setting:
The Project site is bordered by West Lugonia Avenue to the south, Karon Street and an existing residential community to the east, a dirt road and fallow agricultural land to the north, and fallow agricultural land to the west followed by Tennessee Street and State Route 210 (SR-210). **Table A: Surrounding Land Uses and Setting** summarizes the existing land uses, General Plan designations, and zoning designations on the Project site and surrounding properties.

10. Other Public Agencies whose Approval is Required:
Approvals from other regulatory agencies may also be required and are listed as follows:

- N/A

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun? Yes. Please refer to Checklist Section 3.17.
Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process (See Public Resources Code Section 21083.3.2.). Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of the initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: _____ Date: 12.5.23

Name and Title: RYAN MURPHY, SENIOR PLANNER

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c) (3) (D). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

    a. The significance criteria or threshold, if any, used to evaluate each question; and

    b. The mitigation measure identified, if any, to reduce the impact to less than significant.

3.1 AESTHETICS

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to trees, rock outcroppings and historic buildings within a state scenic highway?	☐	☐	☒	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

a. Would the project have a substantial adverse effect on a scenic vista?

Less Than Significant Impact

Discussion of Effects: Scenic resources and vistas in the City of Redlands consist of the scenic corridors and views to and from open spaces, canyonlands, hillsides, groves, historic districts and resources, and the San Bernardino Mountains to the north.

The Project site is currently undeveloped, and conditions on the site generally consist of disturbed vegetation (such as grasses and weeds), a few palm trees, and power utility poles. The Project site is bordered by West Lugonia Avenue to the south followed by commercial land uses and undeveloped land, Karon Street and an existing residential community to the east, a dirt road and fallow agricultural land to the north, and fallow agricultural land to the west followed by Tennessee Street and SR-210. A public park, Texonia Park, exists to the east of the existing residential community, approximately 0.1 mile east of the Project site. The Project site is relatively level with no topographical features existing on the site. However, existing development, specifically the existing residential community east of the Project site, partially obscures views of the distant San Bernardino Mountains to the north.

The proposed Project would result in the construction of 451 apartment units, 72 townhomes, and 18 single-family detached homes, for a total of 541 units. The individual apartment buildings would not exceed 35 feet in height. The townhome buildings would not exceed 34 feet in height, and each single-family residential home would not exceed 20 feet in height. The proposed heights of the apartment and townhouse buildings would be below the maximum building height of four stories (approximately 43 feet)

allowed under the proposed R-3 zoning designation, and the proposed height of the single-family units would be below the maximum building height of 2.5 stories (approximately 35 feet). Although the construction of these homes would partially obscure the view of the San Bernardino Mountains from the Project site itself, partial views of the San Bernardino Mountains would still exist from nearby public access points, including Karon Street to the east of the Project site, portions of West Lugonia Avenue, and the proposed Pennsylvania Street extension.

As such, the proposed Project would have a **less than significant** impact related to scenic vistas. No mitigation is required.

b. Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings and historic buildings within a state scenic highway?

Less Than Significant Impact

Discussion of Effects: According to the California Department of Transportation (Caltrans),[4] no officially designated State Scenic Highways exist in the City of Redlands. Two highways, State Route 330 (SR-330) north of the City of Highland, approximately 4.2 miles north of the Project site, and State Route 38 (SR-38) approximately 0.7 mile east of the Project site, are considered Eligible State Scenic Highways, presumably due to their views of the San Bernardino Mountains to the north and east. However, neither of these highways are officially designated as State Scenic Highways.

Although the Project site is within the viewshed of the section of SR-330 that is eligible for designation as a State Scenic Highway, due to its distance from the highway, the Project site represents a very small portion of the overall panorama. The Project site is not visible from SR-38 due to intervening, existing development. Given that the Project site is not visible from the eligible section of SR-38 and the Project would not exceed the four-story building height limit that applies to the R-3 zone or the 2.5-story building height limit that applies to the R-1 zone, the Project would not damage scenic resources within a State Scenic Highway. Therefore, impacts to scenic resources within a State Scenic Highway viewshed would be **less than significant**. No mitigation is required.

c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact

Discussion of Effects: The Project site is located on the edge of an urban neighborhood within the City of Redlands. Although the Project site is bordered by undeveloped land to the north, south, and west, the proposed Project can be seen as an extension of the urban neighborhood to the east. In addition, as discussed above in Threshold 3.1(b), public views from publicly accessible vantage points, including Karon Street, portions of West Lugonia Avenue, and the proposed Pennsylvania Street extension, would not be substantially degraded as a result of the proposed Project actions.

[4] California Department of Transportation. *California Scenic Highway Mapping System.* Website: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways (accessed October 27, 2023).

The construction phase of the Project would introduce the use of machinery such as excavators and bulldozers, and the presence of the construction equipment, as well as the construction activities, would temporarily alter the visual character of the Project site. Construction staging areas, including earth stockpiling, storage of equipment and supplies, and related activities would contribute to a disturbed site, which could be perceived by some viewers as a potential visual impact. Since construction activities would be temporary, they would not create a significant permanent impact on the visual character or quality of the Project site and its surroundings.

Upon completion of the Project, public views of the Project site along Karon Street, West Lugonia Avenue, and the proposed Pennsylvania Street extension would include streetscape landscaping, apartment buildings, townhome buildings, and single-family dwellings, which would be developed to a similar mass, color, and height as surrounding existing residential uses. As such, public views of the Project site would change to be similar to the views of the existing residential communities to the east. The proposed amenities for the apartment complex and townhome neighborhoods would be within those communities and would not be visible from public streets. In addition, the landscape frontage along West Lugonia Avenue and Karon Street would provide a visual buffer that would allow for an aesthetically pleasing transition to the development within the Project site. The proposed Project would result in a change in the visual character of the site; however, such changes would not be out of line with the existing pattern of land uses surrounding the Project site. For these reasons, implementation of the proposed Project would not generate a substantial degradation of the existing visual character or quality of public views of the site and its surroundings.

The proposed Project would be developed on a site that is currently mostly designated for Commercial land uses pursuant to the City's General Plan, with portions of the site designated as Parks/Golf Courses and Low Density Residential uses. The portion of the Project site designated for Low Density Residential uses is located directly adjacent to Karon Street. Implementation of the proposed Project would develop this portion of the Project site with 18 single-family dwellings at a proposed density of 5.33 dwelling units per acre (du/ac), which would not exceed the 6.0 du/ac density limit of the Low-Density Residential land use designation. A General Plan Amendment (GPA) would be required to change the Commercial and Parks/Golf Courses land use designations to High Density Residential in order to permit the proposed higher housing densities of the apartment complex and townhome neighborhoods. The High-Density Residential designation allows for up to 29 dwelling units per acre. Implementation of the proposed Project would develop this portion of the Project site with 451 apartment units and 72 townhome units for a proposed density of 27.2 du/ac, which would not exceed the density limit of the High-Density Residential land use designation.

The Project site is currently zoned as East Valley Corridor Specific Plan/Special Development District (EV/SD). Single-family dwelling units on parcels of 20 acres or more are permitted as interim uses under the current EV/SD zoning. The EV/SD zoning does not permit, conditionally permit, or permit as an accessory use, higher residential densities. A zoning change from EV/SD to R-3 Multiple Family Residential will be required to permit the proposed densities of the apartment complex and townhome neighborhood (27.2 units per gross acre), and a zoning change from EV/SD to R-1 Single Family Residential along Karon Street will be required to permit the proposed densities of the single-family detached residences (5.33 dwelling units per gross acre). The apartment and townhome residential units proposed for the Project would be no taller than 34 feet in height, which would be under the maximum building height of four stories (approximately 43 feet tall), pursuant to the R-3 zoning designation. The proposed height of the

single-family units would be not taller than 20 feet, which would be below the maximum building height of 2.5 stories (approximately 35 feet) pursuant to the R-1 zoning designation.

Pertaining to development of fences, landscaping and walls on the Project site, the Project Applicant would develop such features in compliance with Chapter 18.168 of the Redlands Zoning Code. The proposed Project would be designed to be consistent with surrounding existing neighborhoods in the vicinity of the Project site. Colored architectural exhibits of the proposed Project are shown in **Figure 7** in the Project Description. These design elements would be complementary of the surrounding visual character of the area and would be consistent with design guidelines in accordance with the City's General Plan. Therefore, impacts to the visual character or quality of the Project site and its surroundings would be **less than significant.** No mitigation is required.

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Less Than Significant Impact

Discussion of Effects: Currently, nighttime lighting is produced by surrounding residential development, street lighting, and vehicles on adjacent roadways. Although the Project site is bordered by undeveloped land to the north, south, and west, the proposed Project actions can be seen as an extension of the existing neighborhood to the east. The proposed Project would add residential uses and vehicle trips that would incrementally increase ambient nighttime illumination in the area. The proposed Project would incorporate street and pedestrian lighting at entrances and exits to the neighborhood, streetlights, and lighting on individual residential units.

All lighting associated with the Project would be shielded such that it would minimize light spillage onto adjacent properties. Through compliance with City zoning and municipal code regulations, lighting would not substantially affect daytime or nighttime views in the Project vicinity.

Glare also can be produced during the daytime and is usually associated with reflective building materials, such as glass, stainless steel, aluminum, and photovoltaic panels. Building materials for the proposed residential development would generally consist of stucco facades, and wood or stone siding. Glass windows would be incorporated into the new home design to be consistent with the architectural style of the surrounding development in accordance with development standards established for the residential land use and zoning designations of the City of Redlands. On January 1, 2020, the California Solar Mandate went into effect requiring all new residential development (single-family and multi-family development) up to three stories in height to install an individual solar panel system for each residential unit. The residential units developed on the Project site would include rooftop photovoltaic panels that would be incorporated as part of the Project design. In the past, such photovoltaic panels were a source of glare that could potentially affect daytime views, especially for aircraft flying in such areas. However, solar panel design has advanced in recent years to increase the amount of sunlight that is absorbed and converted to electricity, thereby decreasing the amount of solar energy that is reflected. In general, since the whole concept of efficient solar power is to absorb as much light as possible, while reflecting as little light as possible, standard solar panels produce less glare and reflection than standard window glass. Technically, solar panels use "high transmission, low iron glass" which absorbs more light, producing a

smaller amount of glare and reflectance than normal glass does.[5] Based on this, installation of rooftop solar photovoltaic panels on the Project's residential units would not increase glare in the area.

The Project site perimeter would be developed with drought-tolerant street trees, decorative landscaping, architectural features, and other streetscape design techniques to minimize light spillage onto neighboring areas. Additionally, the proposed Project would not utilize high gloss or reflective materials that would cause glare or reflection or generate excessive light. Therefore, impacts from new sources of substantial light or glare would be **less than significant**. No mitigation is required.

[5] Colton, Rodger D., Sheehan Fisher, and Colton Public Finance and General Economics. 2014. Assessing Rooftop Solar PV Glare in Dense Urban Residential Neighborhoods: Determining Whether and How Much of a Problem. November 16, 2014. Website: http://www.fsconline.com/downloads/Papers/2014%2011%20Solar_Glare.pdf (accessed October 27, 2023).

3.2 AGRICULTURE AND FORESTRY RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for or cause rezoning of forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact

Discussion of Effects: The Project site is currently undeveloped and generally consists of disturbed vegetation, a few palm trees, and power utility poles. According to the City's General Plan and the California Department of Conservation Farmland Mapping and Monitoring Program, the Project site is designated as Grazing Land.[6,7] Additional Grazing Land is located to the north and west of the site, while the land to the south and east is designated as Urban and Built-Up Land. The Project site is not designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Therefore, implementation

[6] City of Redlands. 2017. *General Plan Update and Climate Action Plan Environmental Impact Report, Final, SCH #2016081041. Figure 3.2-1: Farmland Classifications.* City of Redlands. July 21.

[7] California Department of Conservation. *California Important Farmland Finder.* Website: https://maps.conservation.ca.gov/DLRP/CIFF/ (accessed October 27, 2023).

of the proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. **No impact** would occur, and no mitigation is required.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact

Discussion of Effects: The Project site is currently zoned East Valley Corridor Specific Plan/Special Development District (EV/SD). The purpose of the East Valley Corridor Specific Plan is to plan for large undeveloped areas along Interstate 10 (I-10) to facilitate future industrial, commercial, and residential development in an orderly and aesthetic manner, to provide a strong job base to support the local economy, and to ensure high-quality development through design guidelines and standards. The Project site is not currently zoned for agricultural use. According to the City's General Plan EIR, the Project site is not under a Williamson Act Contract.[8] Therefore, implementation of the proposed Project would not conflict with existing zoning for agricultural use, nor would it conflict with a Williamson Act Contract. **No impact** would occur, and no mitigation is required.

c. Conflict with existing zoning for or cause rezoning of forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact

Discussion of Effects: As discussed above, the Project site is currently zoned East Valley Corridor Specific Plan/Special Development District (EV/SD). The Project site is not zoned as forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). Therefore, implementation of the Project would not conflict with existing zoning for forest resources. **No impact** would occur, and no mitigation is required.

d. Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact

Discussion of Effects: The Project site is currently undeveloped and generally consists of disturbed vegetation, a few palm trees, and power utility poles. The Project site is not occupied by forest land. Therefore, implementation of the proposed Project would not result in the loss of forest land or the conversion of forest land to non-forest use. **No impact** would occur, and no mitigation is required.

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact

Discussion of Effects: The Project site is not adjacent to farmland or forest land, or land that is zoned for agricultural or forestry use. Therefore, implementation of the proposed Project would not involve other changes in the existing environment which, due to its location or nature, could result in conversion of

[8] City of Redlands. *General Plan Update and Climate Action Plan Environmental Impact Report, Final, SCH #2016081041. Figure 3.2-1: Farmland Classifications.* City of Redlands. July 21, 2017

Farmland to non-agricultural use or the conversion of forest land to non-forest use. **No impact** would occur, and no mitigation is required.

3.3 AIR QUALITY

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions, such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☐

The Project site is within the South Coast Air Basin (Basin). The South Coast Air Quality Management District (SCAQMD) is the regional government agency that monitors and regulates air pollution within the Basin. The federal Clean Air Act and the California Clean Air Act mandate the control and reduction of specific air pollutants. Under these acts, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for specific "criteria" pollutants, designed to protect public health and welfare. Primary criteria pollutants include carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NO_X), particulate matter less than 10 microns in size (PM_{10}), sulfur dioxide (SO_2), and lead (Pb). Secondary criteria pollutants include ozone (O_3), and particulate matter less than 2.5 microns in size ($PM_{2.5}$). The ambient air quality standard for each criteria pollutant represents the level that is considered safe to the public and avoids specific adverse health effects associated with each criteria pollutant.

The Basin is in nonattainment for the federal and State standards for O_3 and $PM_{2.5}$, and nonattainment for the State PM_{10} standard. In addition, the Basin is in attainment/maintenance for the federal PM_{10}, CO, SO_2, and nitrogen dioxide (NO_2) standards. The SCAQMD has established project-level thresholds for VOCs, NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$ shown in **Table D: SCAQMD Construction and Operation Thresholds of Significance**. The SCAQMD considers any project in the Basin with construction- or operation-related emissions that exceed any of the emission thresholds below to have potentially significant impacts.

The discussion and analysis provided in this section is based on the Air Quality, Green House Gas, and Energy Technical Memorandum prepared by Michael Baker International and dated June 22, 2023 (refer to **Appendix A-1** of this IS/MND).

Table D: SCAQMD Construction and Operation Thresholds of Significance

Emission Source	Pollutant Emissions Threshold (lbs/day)					
	VOCs	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Thresholds	75	100	550	150	150	55
Operation Thresholds	55	55	550	150	150	55

Source: South Coast Air Quality Management District (SCAQMD). 2023. South Coast AQMD Air Quality Significance Thresholds. March. Website: https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25 (accessed October 27, 2023).

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_2 = sulfur dioxide
VOCs = volatile organic compounds

a. Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact

Discussion of Effects: In order to reduce emissions, the SCAQMD adopted the 2022 Air Quality Management Plan (AQMP) which establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving State and federal air quality standards. The 2022 AQMP is a regional and multi-agency effort including the SCAQMD, CARB, the Southern California Association of Governments (SCAG), and the USEPA.

The 2022 AQMP pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. Additionally, the 2022 AQMP utilized information and data from the SCAG and its 2020-2045 RTP/SCS. The SCAQMD considers projects that are consistent with the 2022 AQMP, which is intended to bring the Basin into attainment for all criteria pollutants, to also have less than significant cumulative impacts.

Criteria for determining consistency with the AQMP are defined by the following indicators:

Criterion 1: With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

1. *Would the project result in an increase in the frequency or severity of existing air quality violations?*

   Since the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, an analysis of a project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency. As discussed under impact thresholds b and c, the Project's short-term construction emissions, long-term operational emissions, and localized concentrations of CO, NO_X, PM_{10}, and $PM_{2.5}$ would result in less than significant impacts during Project construction and operations. Therefore, the Project would not result in an increase in the frequency or severity of existing air quality violations. It is noted that because VOCs are not a criteria pollutant, there is no ambient

standard or localized threshold for VOCs; due to the role VOC plays in O_3 formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established. As such, the Project would not cause or contribute to localized air quality violations or delay the attainment of air quality standard or interim emissions reductions specified in the 2022 AQMP.

2. *Would the project cause or contribute to new air quality violations?*

   As discussed below in Responses 3.3(b) and (c), the proposed Project would result in emissions that would be below the SCAQMD's thresholds for regional and localized emissions. Therefore, the proposed Project would not have the potential to cause or affect a violation of the ambient air quality standards.

3. *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

   As discussed in Responses 3.3(b) and (c), the proposed Project would result in less than significant impacts with regard to localized concentrations during Project construction and operation. As such, the proposed Project would not delay the timely attainment of air quality standards or 2022 AQMP interim emissions reductions.

Criterion 2: With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the Basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not a proposed project exceeds the assumptions utilized in preparing the forecasts presented in the 2022 AQMP. Determining whether or not a project exceeds the assumptions reflected in the 2022 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

1. *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*

   A project is consistent with the 2022 AQMP in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the 2022 AQMP. In the case of the 2022 AQMP, three sources of data form the basis for the projections of air pollutant emissions: the General Plan, SCAG's regional growth forecast, and the SCAG RTP/SCS. The RTP/SCS also provides socioeconomic forecast projections of regional population growth.

   The majority of the Project site is currently designated Commercial, with the eastern portion designated Low-Density Residential (LDR) and a small area in the center of the site designated as Parks/Golf Courses.[9] The Commercial land use category designates areas for the development of a wide range of commercial uses, including neighborhood-serving stores and convenience centers, regional commercial centers, and commercial recreation. The LDR land use category designates areas intended to be developed at densities of up to 6 dwelling units per acres. Park/Golf Courses includes both public and private facilities developed for outdoor active or

[9] City of Redlands. 2022. *City of Redlands General Plan Land Use Map*. April. Website: https://www.cityofredlands.org/sites/main/files/file-attachments/generalplan2035.pdf?1649693557 (accessed October 27, 2023).

passive recreation, trails within linear parks, and golf courses. Further, the site is currently zoned as Special Development District (EV/SD) within the East Valley Corridor Specific Plan.[10] The Special Development District is intended to provide an alternative, more flexible site planning process which encourages creative and imaginative planning of administrative professional, commercial, or industrial developments, or a mixture of such uses, within the framework of a single cohesive concept plan. The Project proposes to construct a mixture of multi-family, townhomes, and single-family residential development for a total of 541 residential units surrounded by existing commercial and residential uses. As such, the proposed Project would require City discretionary approvals of a Zone Change and a General Plan Amendment, among others. As discussed above, the Project site is currently undeveloped with no existing commercial, residential, or park or recreational uses. The proposed residential development would be considered "an efficient use of the land" and increase the Project site's development potential.

Moreover, the Project would be consistent with the General Plan in regard to population and housing upon the City's approval of the required permits. The City's population estimate as of January 1, 2022, is 72,585 persons.[11] The Project would induce population growth directly through the construction of 541 residential units. Based on an average household size of 2.68 for the City of Redlands[12], the Project would result in a direct population increase of approximately 1,450 persons. While it is likely that future residents already live in the City, this analysis conservatively assumes all 1,450 future residents would move into the City. SCAG growth forecasts estimate the City's population to reach 80,800 persons by 2045, representing an estimated total increase of 11,300 persons between 2016 and 2045.[13] The Project's potential direct population growth (1,450 persons) therefore represents approximately 12.83 percent of the City's anticipated growth between 2016 and 2045, and a nominal amount (approximately 1.73 percent) of the City's total projected 2045 population. As such, the Project would be consistent with the types, intensity, and patterns of land use envisioned for the site vicinity and would be considered consistent with the General Plan upon the City's approvals of the required permits. It should be noted that the proposed residential development would also contribute to satisfying the City's housing needs as indicated by Regional Housing Needs Assessment (RHNA). Further, the population and housing growth projections, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City. As the SCAQMD has incorporated these same projections into the 2022 AQMP, it can be concluded that the proposed Project would be consistent with the projections.

2. *Would the project implement all feasible air quality mitigation measures?*

The proposed Project would not require mitigation and would result in less than significant air quality impacts (refer to Responses 3.3(b) and (c) below). In addition, the Project would comply with all applicable SCAQMD rules and regulations, including Rule 403 that requires excessive

[10] City of Redlands. 2022. *City of Redlands - Zoning Map.* April. Website: https://www.cityofredlands.org/sites/main/files/file-attachments/zoning.pdf?1649714270 (accessed October 27, 2023).

[11] California Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2021-2022, with 2020 Benchmark.* Website: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/ (accessed October 27, 2023).

[12] Ibid.

[13] Southern California Association of Governments (SCAG). 2020. *2020-2045 RTP/SCS Final Connect SoCal Demographic and Growth Forecast*, adopted September 3, 2020. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_demographics-and-growth-forecast.pdf?1606001579 (accessed October 27, 2023).

fugitive dust emissions be controlled by regular watering or other dust prevention measures, and Rule 1113 that regulates the reactive organic gas (ROG) content of paint. As such, the proposed Project meets this AQMP consistency criterion.

3. *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

   Land use planning strategies set forth in the 2022 AQMP are primarily based on the 2020-2045 RTP/SCS. The Project site is within an urbanized area, with the nearest bus stop serving OmniTrans Bus line 15 located along West Lugonia Avenue approximately 400 feet to the west of the site. Surrounding land uses include undeveloped land to the north, single-family residences to the east, commercial land uses and undeveloped land to the south, and undeveloped land to the west with transportation uses (i.e., Tennessee Street and SR-210) located farther west. Further, the Project would provide bicycle parking spaces and electric vehicle charging stations on site to promote alternative transportation options. Therefore, the Project would be consistent with the actions and strategies of the 2020-2045 RTP/SCS.

In conclusion, the determination of 2022 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the Basin. The proposed Project would not result in a long-term impact on the region's ability to meet State and federal air quality standards. Also, the proposed Project would be consistent with the goals and policies of the 2022 AQMP for control of fugitive dust (refer to Response 3.3(b)). As discussed above, the proposed Project's long-term influence would also be consistent with the SCAQMD and SCAG's goals and policies and, therefore, it would be considered consistent with the 2022 AQMP.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?

Less Than Significant Impact

Discussion of Effects: As identified above, the Basin is currently designated as nonattainment for the federal and State standards for O_3 and $PM_{2.5}$. The Basin's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified SCAQMD significance thresholds identified in **Table D**, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed Project.

Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by site preparation and grading activities. Emissions from construction equipment are also anticipated and would include CO, NO_X, VOCs, directly emitted $PM_{2.5}$ or PM_{10}, and toxic air contaminants such as diesel exhaust particulate matter.

Project construction activities would include site preparation, grading, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed Project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The SCAQMD has established Rule 403: Fugitive Dust, which would require the Project Applicant to implement measures that would reduce the amount of particulate matter generated during the construction period. The Rule 403 measures that were incorporated in this analysis include:

- Water active sites at least three times daily (locations where grading is to occur shall be thoroughly watered prior to earthmoving).

- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.

- Reduce traffic speeds on all unpaved roads to 15 miles per hour or less.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SO_X), NO_X, VOCs, and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

The Project would be constructed over 31 months, with construction anticipated to begin in April 2024[14]. Exhaust emission factors for typical diesel-powered heavy equipment are based on the California Emissions Estimator Model version 2022.1 (CalEEMod) program defaults. The construction equipment list was provided by the Project Applicant and used in the CalEEMod analysis. Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of

[14] Since the time this analysis was prepared, the construction year has changed to 2025. As the analysis year increases, emission factors decrease due to the natural turnover of older equipment being replaced by less polluting equipment and emission regulations becoming more stringent. Therefore, the construction schedule utilized in the analysis represents a more conservative analysis.

construction personnel, and the amount of materials to be transported on or off site. The analysis of daily construction emissions has been prepared using CalEEMod. Refer to **Appendix A-2** for the CalEEMod outputs and results. **Table E: Short-Term Construction Emissions**, presents the anticipated daily short-term construction emissions.

Table E: Short-Term Construction Emissions

Emission Sources	Pollutants (lbs/day)[1]					
	VOCs	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Year 1 (2024)						
Construction Related Emissions[2]	4.24	23.60	56.60	0.06	6.90	2.23
Year 2 (2025)						
Construction Related Emissions	3.83	21.40	53.60	0.06	6.79	2.13
Year 3 (2026)						
Construction Related Emissions	58.60	30.00	71.40	0.08	8.44	2.74
Maximum Daily Emissions	**58.60**	**30.00**	**71.40**	**0.08**	**8.44**	**2.74**
SCAQMD Regional Threshold	75	100	550	150	150	55
Significant Emissions?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Air Quality, Greenhouse Gas, and Energy Technical Memorandum (Michael Baker, June 2023).

1. Emissions were calculated using CalEEMod, version 2022.1.
2. Modeling assumptions include compliance with SCAQMD Rule 403 which requires: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

As shown in **Table E**, construction emissions associated with the Project would not exceed the SCAQMD's thresholds for VOC, NO_X, CO, SO_X, $PM_{2.5}$, and PM_{10}. Construction activities would comply with SCAQMD Rule 402, which prohibits fugitive dust from creating a nuisance off site, and Rule 403, which requires that excessive fugitive dust emissions be controlled by regular watering or other dust prevention measures. Adherence to SCAQMD Rule 403 would greatly reduce PM_{10} and $PM_{2.5}$ concentrations. In addition, all architectural coatings for the proposed Project's structures would be required to comply with SCAQMD Rule 1113. Rule 1113 provides specifications on painting practices as well as regulates the ROG content of paint. Therefore, construction of the proposed Project would not result in a cumulatively considerable increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. Impacts would be **less than significant,** and no mitigation is required.

Operational Emissions. Long-term air quality impacts would consist of mobile source emissions generated from Project-related traffic, and emissions from stationary area and energy sources. Emissions associated with each of these sources were calculated and are discussed below.

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport SO_X, PM_{10}, and $PM_{2.5}$); however, CO tends to be a localized pollutant, dispersing rapidly at the source. Based on the *Traffic Study* prepared by Michael Baker International (**Appendix H-1**), the proposed Project would

result in approximately 3,728 average daily trips, with 228 a.m. peak hour trips and 288 p.m. peak hour trips.

Energy source emissions would be generated as a result of electricity and natural gas (non-hearth) usage associated with the proposed residential development. The primary use of electricity and natural gas by the Project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. Criteria air pollutant emissions from electricity use were not quantified since criteria pollutants emissions occur at the site of the power plant, which is off site. Therefore, energy source emissions from electricity usage would be zero and the emissions would only be generated from consumption of the natural gas.

Typically, area source emissions consist of direct sources of air emissions located at the Project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the Project would include emissions from the use of landscaping equipment, architectural coating, and consumer products.

Operational emissions generated by the proposed Project were calculated with CalEEMod and are detailed in **Table F: Project Operational Emissions,** below.

Table F: Project Operational Emissions

Emission Type	Pollutant Emissions (lbs/day)[1]					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Proposed Project Summer Emissions						
Area Source Emissions	15.50	7.95	37.40	0.05	0.63	0.64
Energy Source Emissions	0.10	1.74	0.74	0.01	0.14	0.14
Mobile Source Emissions	15.00	15.50	150.00	0.38	33.6	9.47
Total Emissions[2]	**30.60**	**25.20**	**188.00**	**0.44**	**34.30**	**9.47**
Proposed Project Winter Emissions						
Area Source Emissions	12.20	7.63	3.25	0.05	0.62	0.62
Energy Source Emissions	0.10	1.74	0.74	0.01	0.14	0.14
Mobile Source Emissions	14.00	16.60	124.00	0.36	33.60	8.70
Total Emissions[2]	**26.30**	**26.00**	**128.00**	**0.42**	**34.30**	**9.45**
Peak Emissions	**30.36**	**26.00**	**188.00**	**0.44**	**34.30**	**9.47**
SCAQMD Threshold	55.0	55.0	550.0	150.0	150.0	55.0
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Air Quality, Greenhouse Gas, and Energy Technical Memorandum (Michael Baker, June 2023).
[1] Emissions were calculated using CalEEMod, version 2022.1.
[2] The numbers may be slightly off due to rounding.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

As shown in **Table F**, the proposed Project would not exceed the significance criteria for daily VOCs, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$ emissions. Therefore, operation of the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard. Impacts would be **less than significant**, and no mitigation is required.

c. Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact

Discussion of Effects: Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project site include the single-family residences located approximately 33 feet (10 meters) to the east of the Project site boundary.

Local Significance Thresholds (LSTs) were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 and revised 2008) for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts. The SCAQMD provides the LST screening lookup tables for projects that disturb/grade 1, 2, or 5 acres per day emitting CO, NO_X, $PM_{2.5}$, or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over 5 acres in size should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors from area source emissions. For LST analysis purposes, the SCAQMD is divided into 38 Source Receptor Areas (SRAs), each of which contain specific localized air quality emission thresholds for CO, NO_X, $PM_{2.5}$, and PM_{10} to determine local air quality impacts. The proposed Project would be located in SRA 35, East San Bernardino Valley.

The SCAQMD provides LST thresholds for 1-, 2-, and 5-acre site disturbance areas per day; it is noted that the SCAQMD does not provide LST thresholds for projects disturbing over 5 acres per day. The SCAQMD guidance on applying CalEEMod to LSTs specifies the number of acres a particular piece of equipment would likely disturb per day.[15] Based on the equipment provided by the Project Applicant and default information provided by CalEEMod, the Project would actively disturb an average of approximately 2.5 acres per day. Therefore, the LST thresholds for 2 acres were conservatively utilized for the construction LST analysis. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. As the nearest sensitive receptor is located approximately 10 meters from the Project site's boundary, the LST values for 25 meters were used.

Table G: Localized Significance of Construction Emissions, shows the localized construction-related emissions. It is noted that the localized emissions presented in **Table G** are less than those in **Table E** because localized emissions include only on-site emissions (i.e., from construction equipment and fugitive dust), and do not include off-site emissions (i.e., from worker, vendor, and hauling trips). As seen in **Table G**, emissions would not exceed the LSTs for SRA 35. Construction LST impacts would be **less than significant**.

[15] The number of acres represents the total acres traversed by grading equipment. In order to properly grade a piece of land, multiple passes with equipment may be required. The disturbance acreage is based on the equipment list and days of the grading phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday.

Table G: Localized Significance of Construction Emissions (in Pounds Per Day)[1]

Maximum Emissions	NO_X	CO	PM_{10}	$PM_{2.5}$
Year 1 (2024)[2]	18.50	20.00	1.17	0.75
Year 2 (2025)[3]	16.80	19.90	0.71	0.65
Year 3 (2026)[4]	25.30	32.80	1.03	0.95
Maximum Daily Emissions[5]	**25.30**	**32.80**	**1.03**	**0.95**
Localized Significance Threshold[6]	**118.0**	**775.0**	**4.0**	**4.0**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Air Quality, Greenhouse Gas, and Energy Technical Memorandum (Michael Baker, June 2023).

[1] Emissions were calculated using CalEEMod, version 2022.1. Winter emissions represent worst-case.

[2] Maximum on-site daily emissions occur during grading phase for all pollutants in Year 1.

[3] Maximum on-site daily emissions occur during building construction phase for NOX, CO, PM10, and PM2.5 in Year 2 and Year 3.

[4] Building construction, paving, and architectural coating phases are expected to occur simultaneously in Year 3, As such, maximum on-site emissions shown for Year 3 is the sum of all on-site emissions occurring during building construction, paving, and architectural coating phases.

[5] The maximum daily construction emissions include fugitive dust control measures required by SCAQMD Rule 403, which includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.

[6] The Localized Significance Threshold was determined using Appendix C of the SCAQMD *Final Localized Significant Threshold Methodology* guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction (more than 2 acres per day), the distance to sensitive receptors (less than 25 meters), and the source receptor area (SRA 35, East San Bernardino Valley).

CO = carbon monoxide
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

In addition, according to SCAQMD localized significance threshold methodology, LSTs would apply to the operational phase of a proposed project if the project includes stationary sources or attracts mobile sources that may spend extended periods queuing and idling at the site (e.g., warehouse or transfer facilities). The proposed Project does not include such uses. Thus, due to the lack of such emissions, no long-term localized significance threshold analysis is necessary. Operational LST impacts would be **less than significant**.

Long Term Microscale (CO Hot Spot) Analysis. CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (adversely affecting residents, school children, hospital patients, the elderly, etc.).

The SCAQMD requires a quantified assessment of CO hotspots when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by 0.02 (2 percent) for any intersection with an existing level of service (LOS) of D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersections.

The Basin is designated as an attainment/maintenance area for the federal CO standards and an attainment area for State standards. There has been a decline in CO emissions even though vehicle miles traveled on U.S. urban and rural roads have increased. Nationwide estimated anthropogenic CO emissions have decreased 68 percent between 1990 and 2014. In 2014, mobile sources accounted for 82 percent of the nation's total anthropogenic CO emissions.[16] CO emissions have continued to decline since this time.

[16] United States Environmental Protection Agency, *Carbon Monoxide Emissions*, https://cfpub.epa.gov/roe/indicator_pdf.cfm?i=10 (accessed October 27, 2023).

The Basin was re-designated as attainment in 2007 and is no longer addressed in the SCAQMD's AQMP. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the Federal Attainment Plan for Carbon Monoxide (CO Plan) for the SCAQMD's *2003 Air Quality Management Plan*, which is the most recent AQMP that addresses CO concentrations. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the Basin and would likely experience the highest CO concentrations. Thus, CO analysis within the CO Plan is utilized in a comparison to the proposed Project, since it represents a worst-case scenario with heavy traffic volumes within the Basin.

Of these locations, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles experienced the highest CO concentration (4.6 parts per million [ppm]), which is well below the 35 ppm 1-hour CO federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California, with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hotspots would not be experienced at any intersections within the City near the Project site due to the comparatively low volume of traffic that would occur as a result of Project implementation. Therefore, impacts would be **less than significant**.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact

Discussion of Effects: According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed Project does not include any uses identified by the SCAQMD as being associated with odors.

Construction activities associated with the Project may generate detectable odors from heavy-duty equipment exhaust and architectural coatings. However, construction-related odors would be short term in nature and cease upon Project completion. In addition, the Project would be required to comply with the California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than 5 minutes. This would further reduce the detectable odors from heavy-duty equipment exhaust. The Project would also comply with the SCAQMD Rule 1113, which would minimize odor impacts from ROG emissions during architectural coating. Any impacts to existing adjacent land uses would be short term and are less than significant.

3.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

The information and analysis in this section have been prepared based on the Results of a Biological Resources Assessment for the Proposed Neighborhoods at Lugonia Village, City of Redlands, County of

San Bernardino, California, prepared by Michael Baker International in February 2023[17] (**Appendix B-1**) and the Burrowing Owl (Athene cunicularia) Focused Survey for the Neighborhoods at Lugonia Village, City of Redlands, County of San Bernardino, California, prepared by Michael Baker International in July 2022[18] (**Appendix B-2**).

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact with Mitigation Incorporated

Discussion of Effects: The Project site is currently undeveloped, generally flat, and rectangular in shape. Conditions on the Project site generally consist of disturbed vegetation with areas that are subject to continual weed abatement and as a result contain compacted bare or sparsely vegetated ground. Where present, vegetation is dominated by native and non-native ruderal species.

The *Biological Resources Assessment* included in **Appendix B-1** included a literature review and record search for special-status biological resources potentially occurring on or within the vicinity of the Project site (within a 5-mile radius) and a biological field survey/habitat assessment of the Project site and a 500-foot buffer (survey area) conducted on April 5, 2022, to evaluate the condition of any potential habitat present within the Project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the Project site were determined through a query of the California Natural Diversity Database (CNDDB) Rarefind 5, California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, and the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC). USFWS-designated Critical Habitat for species listed under the Federal Endangered Species Act (FESA) was reviewed online via the Environmental Conservation Online System: Threatened and Endangered Species Active Critical Habitat Report. In addition, the *Biological Resources Assessment* included the review of previously prepared reports, survey results, and literature, as available, detailing the biological resources previously observed on or within the vicinity of the Project site to understand existing site conditions, confirm previous species observations, and note the extent of any disturbances, if present, that have occurred within the Project site that would otherwise limit the distribution of special-status biological resources. The only sensitive wildlife species determined to have a moderate or high potential to occur at the Project site is the Cooper's hawk (*Accipiter cooperii*; a State Watch List [WL] species) as a foraging species, with a low potential to nest; burrowing owl (*Athene cunicularia*) as a foraging and nesting species; southern California legless lizard (*Anniella stebbinsi*; a State Species of Special Concern [SSC]); and the California horned lark (*Eremophila alpestris actia*; a State WL species). All other special-status wildlife species identified by the CNDDB and IPaC either have a low potential or are not expected to occur within the Project site. Based on the results of the field survey and a review of specific habitat preferences, distributions, and elevation ranges, the *Biological Resources Assessment* determined that none of the special-status plant species identified by the CNDDB, California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California

[17] Michael Baker International. 2023. *Results of a Biological Resources Assessment for the Proposed Neighborhoods at Lugonia Village – City of Redlands, County of San Bernardino, California.*

[18] Michael Baker International. 2022. *Results of a Burrowing Owl (Athene cunicularia) Focused Survey for The Proposed Neighborhoods at Lugonia Village – City of Redlands, County of San Bernardino, California.*

(CIRP), and IPaC are expected to occur within the Project site. In addition, the Project site is not within USFWS-designated Critical habitat for any federally listed species.

No special-status plant species or special-status vegetation communities were observed within the Project site during the field survey. One special-status wildlife species, the Loggerhead shrike (*Lanius ludovicianus*; a State SSC), was observed during the field survey. However, due to a lack of nesting habitat and this species' status as a breeding bird along the southern California coastal slope, the bird that was observed was more likely a transient or lingering wintering bird that had not yet made it back to its breeding territory.

The Project site consists of existing disturbed areas that have been subject to a high level of anthropogenic disturbances that have eliminated the natural plant communities that once occurred on site. As such, the majority of the Project site consists of native and non-native ruderal/weedy plant species. Plant species identified on the Project site include annual bursage (*Ambrosia acanthicarpa*), common fiddleneck (*Amsinckia intermedia*), red brome (*Bromus rubens*), and London rocket (*Susymbrium irio*). The Project site provides minimal foraging and cover habitat for wildlife species adapted to a high degree of anthropogenic disturbance. Avian species observed during the field investigation include northern mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), white-crowned sparrow (*Zoniotrichia leucophrys*), house finch (*Haemorhour mexicanus*), and western meadowlark (*Sturnella neglecta*). The only reptilian species observed during the field investigation was western side-blotched lizard (*Uta stansburiana elegans*). Mammalian species observed during the field investigation included the long-tailed weasel (*Mustela frenata*) and California ground squirrel (*Otospermophilus beechei*). No fish or amphibian species were observed during the field investigation as no hydrogeomorphic features were observed on the Project site that would provide suitable habitat.

Due to its regional significance in the vicinity of the Project site, focused burrowing owl surveys were conducted on four separate days during the 2022 breeding season (February 1 through August 31). Areas that provided suitable habitat for the burrowing owl were surveyed for suitable, occupied, and remnant burrows consisting of natural and non-natural substrates. Methods to detect the presence of burrowing owls included direct observation, aural detection, and signs of presence (i.e., pellets, white wash, feathers, or prey remains, particularly around burrows). The *Burrowing Owl Focused Survey* included in **Appendix B-2** concluded that no burrowing owls, sign of burrowing owls (i.e., pellets, white wash, feathers, or prey remains), occupied burrows, or recemented burrows were observed during any of the four focused survey days. The survey results did note, however, that the Project site contains suitable foraging and nesting habitat for the burrowing owl and suitable burrows were observed during the surveys. In addition, the Project site is approximately 2 miles away from the closest known occurrence of burrowing owl. Due to the presence of suitable burrows and foraging habitat as well as the Project site's proximity to existing occurrence records of the burrowing owl, the *Burrowing Owl Focused Survey* recommended pre-construction surveys for burrowing owls be conducted as described in **Mitigation Measure BIO-1** prior to any ground-disturbing activities to reduce potential impacts to burrowing owls that may be present on or around the Project site.

While no breeding or nesting birds or raptors were observed within the Project site and surrounding vicinity, vegetation on the Project site could provide nesting habitat for birds protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. Construction of the proposed Project may occur during the bird breeding season (typically February 1 through August 31), which could result in ground-disturbing construction activities directly affecting birds protected by the MBTA and their nests

through the removal of habitat on the Project site and indirectly through increased noise, vibration, and increased human activity. **Mitigation Measure BIO-2** requires that nesting bird pre-construction clearance surveys be conducted prior to any ground-disturbing activities.

Mitigation Measure BIO-1 A pre-construction burrowing owl clearance survey shall be conducted no less than 14 days prior to any vegetation removal or ground-disturbing activities to avoid impacts to burrowing owls and/or occupied burrows. The pre-construction clearance survey shall be conducted by a qualified biologist and in accordance with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). A second clearance survey shall be conducted within 24 hours prior to ground disturbance. Documentation of surveys and findings shall be submitted to the City of Redlands for review and file. If no burrowing owls or occupied burrows are detected, Project activities may begin, and no additional avoidance and minimization measures shall be required.

If an occupied burrow is found outside, but within 500 feet, of the development footprint, the qualified biologist shall establish a "no-disturbance" buffer around the burrow location(s). The size of the "no-disturbance" buffer shall be determined in consultation with the California Department of Fish and Wildlife (CDFW) and be based on the species status (i.e., breeding, non-breeding) and proposed level of disturbance. If an occupied burrow is found within the development footprint and cannot be avoided, a burrowing owl exclusion and mitigation plan shall be prepared and submitted to CDFW for approval prior to initiating Project activities.

Mitigation Measure BIO-2 Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey shall be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season. Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered "take" and is potentially punishable by fines and/or imprisonment.

If Project-related activities are to be initiated during the nesting season (January 1 to August 31), a pre-construction nesting bird clearance survey shall be conducted by a qualified biologist no more than three (3) days prior to the start of any vegetation removal or ground disturbing activities. The qualified biologist shall survey all suitable nesting habitat within the Project impact area, and areas within a biologically defensible buffer zone surrounding the Project impact area. If no active bird nests are detected during the clearance survey, Project activities may begin, and no additional avoidance and minimization measures shall be

required. If an active bird nest is found, the species shall be identified, and a "no-disturbance" buffer shall be established around the active nest. The size of the "no-disturbance" buffer shall be increased or decreased based on the judgement of the qualified biologist and level of activity and sensitivity of the species. The qualified biologist shall periodically monitor any active bird nests to determine if Project-related activities occurring outside the "no-disturbance" buffer disturb the birds and if the buffer should be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, Project activities within the "no-disturbance" buffer may occur following an additional survey by the qualified biologist to search for any new bird nests in the restricted area.

With implementation of Mitigation Measures BIO-1 and BIO-2, the proposed Project would have a less than significant impact with mitigation incorporated on special-status species.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact

Discussion of Effects: No discernible drainage courses, inundated areas, or wetland features/obligate plant species that would be considered jurisdictional by the United States Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), or the CDFW were observed within the Project site. In addition, no special-status vegetation or other natural community were observed on the Project site during the biological field survey/habitat assessment. Therefore, the proposed Project would have **no impact** on riparian habitat or other sensitive natural communities, and no mitigation is required.

c. Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact

Discussion of Effects: As discussed in Response 3.4(b) above, no discernible drainage courses, inundated areas, or wetland features/obligate plant species that would be considered jurisdictional by the USACE, the RWQCB, or the CDFW were observed within the Project site. Therefore, the proposed Project would have **no impact** on federally protected wetlands, and no mitigation is required.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact with Mitigation Incorporated

Discussion of Effects: Habitat fragmentation occurs when a single, contiguous habitat area is divided into two or more areas, or where an action isolates the two or more new areas from each other. Isolation of habitat occurs when wildlife cannot move freely from one portion of the habitat to another or to/from

one habitat type to another. Habitat fragmentation may occur when a portion of one of more habitats is converted into another habitat, as when scrub habitats are converted into annual grassland habitat because of frequent burning. Wildlife movement includes seasonal migration along corridors, as well as daily movements for foraging. Examples of migration corridors may include areas of unobstructed movement for deer, riparian corridors providing cover for migrating birds, routes between breeding waters and upland habitat for amphibians, and between roosting and feeding areas for birds.

The Project site is not located within any wildlife corridors. The Project site is surrounded by developed land (residential and commercial uses) to the east and south and undeveloped land to the north and west, with minimal opportunities for movement to the south and almost no movement opportunities to the east and west. The Santa Ana River Wash is located approximately 1.25 miles north of the Project site; however, this natural area is separated from the Project site by existing roads and developments. Based on the surrounding area, any wildlife movement across the Project site is most likely to be local movements rather than regional. However, the surrounding residential land uses and existing roadways have fragmented the connection between the Project site and other undeveloped areas in the vicinity and region. The existing landscape of the Project site and absence of native vegetation would also limit the movement of wildlife through the Project site. In addition, wildlife movement across the Project site is further reduced by the presence of surrounding high-traffic roadways (e.g., West Lugonia Avenue, West San Bernardino Avenue, and SR-210) and existing residential and commercial development. Elevated noise levels, vehicle traffic, lighting, and human presence associated with the surrounding residential and commercial developments and roadways would also decrease the suitability of the Project site to be used as a wildlife movement corridor.

Although no riparian or other natural vegetation communities occur on the Project site, existing vegetation on the Project site may provide nesting habitat for migratory birds. Therefore, with implementation of **Mitigation Measure BIO-2** for the protection of birds pursuant to the MBTA, the proposed project would have a **less than significant impact with mitigation incorporated** on the movement of native resident or migratory fish or wildlife species, native or migratory wildlife corridors, or native wildlife nursery sites.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact

Discussion of Effects: The City of Redlands General Plan outlines policies that protect biological resources. These policies pertain to important ecological areas in the City of Redlands, such as San Timoteo Canyon, Live Oak Canyon, the Crafton Hills, the Santa Ana River, Mill Creek, and other riparian areas within the City of Redlands. The Project site is not in the vicinity of any of the important ecological areas identified in the City of Redlands General Plan, and no riparian areas were observed on the Project site.

Street trees and other trees in the public domain within the City of Redlands are managed pursuant to Redlands Municipal Code Chapter 12.52 (Trees and Tree Protection along Streets and in Public Places).19 However, the City of Redlands does not have any local policies or ordinances pertaining to trees on private property.

[19] City of Redlands Municipal Code Chapter 12.52. *Trees and Tree Protection along Streets and in Public Places*.

The Project would not conflict with any policies protecting biological resources in the City and would not require the removal of any street trees. Therefore, development of the proposed Project would not conflict with any local policies or ordinances protecting biological resources. **No impact** would occur, and no mitigation is required.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact

Discussion of Effects: The City has adopted the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan, which permits and mitigates construction and maintenance activities within the Santa Ana River Wash, approximately 1.1 miles north of the Project site, including water conservation, wells and water infrastructure, aggregate mining, transportation, flood control, agriculture, trails, and habitat enhancement. The Project site is located outside the boundaries of the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan. As such, **no impact** or conflict would occur in regard to conservation plans, and no mitigation is required.

3.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

The information and analysis in this section is based on the *Cultural Resources Assessment* prepared by LSA in February 2023 (**Appendix C**).

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less Than Significant with Mitigation Incorporated

Discussion of Effects: Pursuant to §15064.5, the term "historical resource" shall include:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources [California Register] (Pub. Res. Code §5024.1, Title 14 California Code of Regulations [CCR], Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852) including the following:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

B. Is associated with the lives of persons important in our past.

C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

D. Has yielded, or may be likely to yield, information important in prehistory or history.

A "substantial adverse change" to a historical resource, according to Public Resources Code (PRC) §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

A project-specific cultural resources assessment was conducted for the Project site and included an archaeological and historical record search by the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, a Sacred Lands File search, an intensive pedestrian survey of the project parcel, and additional research from a qualified LSA archaeologist including review of historic period aerial photographs, maps, and the Built Environment Resource Directory (**Appendix C: Cultural Resources Assessment**). The record search by SCCIC included a review of all recorded historic-era and prehistoric archaeological sites within the Project site and a 1-mile search radius, as well as a review of known cultural resource surveys and excavation reports.

The results of the record search identified 12 previous cultural resource studies within 0.5 mile of the Project site, none of which included the Project site. Additionally, 15 previously identified cultural resources were recorded within 0.5 mile of the Project site, including historic period foundations and refuse scatters, water conveyance features, orchards, landscaping, and four built environment properties which have been evaluated as eligible for local listing as historical properties. Review of historic period aerial photographs and maps indicates that there were buildings within the vicinity of the Project site (apparently a residence and ancillary buildings) from the 1890s until they were removed sometime before 1959, and the parcels were under cultivation with a citrus orchard from at least the late 1930s until at least the late 1960s.

The Sacred Lands File (SLF) record search was performed by the Native American Heritage Commission (NAHC). On November 7, 2022, the NAHC responded indicating the record search was positive, and a list of Native American contacts in San Bernardino County to be contacted for consultation was provided. The records and results of Tribal Consultation are discussed in Section 3.18, Tribal Cultural Resources.

The intensive pedestrian survey of the Project site identified a historic period water conveyance system and feature on the Project site, LSA-CRX2202-S-1. This resource comprises a somewhat unusual water conveyance (irrigation) system (three predominantly rock-and-mortar flumes) along with a brick-and-mortar cistern. Rock-and-mortar flumes are generally associated with late 19th to early 20th century agriculture, and the combination of materials and technology in these (cobbles and mortar, cement-surfaced brick-and-mortar, pre-cast concrete/concrete pipe) suggests an 1890s to 1910s irrigation system that was repaired/maintained well into the 20th century. The system has been severely damaged, disrupted, and obscured (buried). This sustained catastrophic loss of integrity in terms of both physical aspect and setting makes this resource ineligible for the California Register of Historical Resources (California Register) or local designation under the City's Historic and Scenic Preservation Ordinance. As such, collectively the features do not constitute a "historical resource" or "unique archaeological resource" as defined by CEQA. There are no prehistoric resources documented within 1 mile of the Project

site. However, the apparent age of the resource and the former presence of a related residence and ancillary buildings suggest some potential for undocumented subsurface historic period cultural resources.

Although there are no prehistoric resources document within 1 mile of the Project site, due to the former presence of 19th century buildings within the Project site, there is some potential for the proposed Project to unearth previously undocumented cultural resources during construction. Therefore, **Mitigation Measures CUL-1 and CUL-2**, which require the retention of a qualified archaeologist on an on-call basis to assess the significance of any find and determine the appropriate treatment in the event that unanticipated cultural material is unearthed on the Project site, are prescribed.

Mitigation Measure CUL-1 Prior to the issuance of a grading permit, the Applicant shall provide the Director of the City of Redlands Department of Development Services, or designee, with evidence that it has retained the services of a qualified archaeologist that meets the Secretary of the Interior standards on an on-call basis. Archaeological monitoring shall occur during all excavation activities down to a depth of 3 feet within 100 feet of the former residence location. In the event that cultural resources are discovered during Project activities, all work in the immediate vicinity of the find (within a 100-foot buffer) shall cease and the project archaeologist shall assess the find and determine appropriate treatment. Work on the other portions of the Project outside of the buffered area may continue during this assessment period.

Mitigation Measure CUL-2 If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the qualified archaeologist shall develop a Monitoring and Treatment Plan for the remainder of the Project site. The Monitoring and Treatment Plan shall be developed in coordination with the Applicant and the City. The Applicant shall secure a monitoring agreement with the archaeologist prior to the recommencement of work, and the archaeologist shall monitor during the remainder of the ground disturbance activities on the Project site and implement the Plan accordingly.

Implementation of **Mitigation Measures CUL-1 and CUL-2** would reduce impacts to known, unknown, or potential cultural resources that may be located within the Project site to **less than significant** levels.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant with Mitigation Incorporated

Discussion of Effects: Please refer to Response 3.5(a). Implementation of **Mitigation Measures CUL-1 and CUL-2** would reduce impacts to known, unknown, or potential archaeological resources that may be located within the Project site to **less than significant** levels.

c. Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant with Mitigation Incorporated

Discussion of Effects: No known human remains are present on the Project site, and there are no facts or evidence to support the idea that Native Americans or people of European descent are buried on the Project site; however, buried and undiscovered archaeological resources, including human remains, may be present below the ground surface in portions of the Project site. Disturbing human remains could violate the State Health and Safety Code, as well as destroy the resource. In the unlikely event that human remains are encountered during Project grading, the construction contractor would be required to notify the proper authorities and adhere to standard procedures that would ensure the respectful handling of human remains during the earthmoving activities.

Construction contractors are required to adhere to California Code of Regulations (CCR) Section 15064.5(e), Public Resources Code (PRC) Section 5097, and Section 7050.5 of the State's Health and Safety Code. To ensure proper treatment of burials in the event of an unanticipated discovery of a burial, human bone, or suspected human bone, the law requires that all excavation or grading in the vicinity of the find halt immediately, the area of the find be protected, and the contractor immediately notify the County Coroner of the find. The construction contractor, the Applicant, and the County Coroner are required to comply with the provisions of CCR Section 15064.5(e), PRC Section 5097.98, and Section 7050.5 of the State Health and Safety Code. Compliance with these provisions (specified in **Regulatory Compliance Measure CUL-1**) would ensure that any potential impacts to unknown buried human remains would be **less than significant** by ensuring appropriate examination, treatment, and protection of human remains as required by State law.

Regulatory Compliance Measure CUL-1

In the event that human remains or funerary objects are encountered on the Project site during any construction activities associated with the Project, work within 100 feet of the discovery shall be redirected and the County Coroner notified immediately consistent with the requirements of California Code of Regulations (CCR) Section 15064.5(e). State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. If the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which shall determine and notify a Most Likely Descendant (MLD).

With the permission of the property owner, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Consistent with CCR Section 15064.5(d), if the remains are determined to be Native American and an MLD is notified, the Applicant shall consult with the MLD as

identified by the NAHC to develop an agreement for treatment and disposition of the remains. Prior to the issuance of grading permits, the Director of the City of Redlands Department of Development Services, or designee, shall verify that all grading plans specify the requirements of CCR Section 15064.5(e), State Health and Safety Code Section 7050.5, and PRC Section 5097.98, as stated above.

3.6 ENERGY

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

The discussion and analysis provided in this section is based on the Michael Baker International *Air Quality, Greenhouse Gas, and Energy Technical Memorandum* dated June 22, 2023 (refer to **Appendix A-1** of this IS/MND).

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact

Discussion of Effect: This analysis focuses on three sources of energy that are relevant to the proposed Project: electricity, natural gas, and transportation fuel for vehicle trips and off-road equipment associated with Project construction and operations. The analysis of operational electricity is based on the California Emissions Estimator Model version 2022.1 (CalEEMod) modeling results for the Project. The Project's estimated electricity consumption is based primarily on CalEEMod's default settings for the County, and consumption factors provided by Southern California Edison (SCE) and the Southern California Gas Company (SoCalGas), who are the electricity and natural gas providers for the City and the Project site. The results of the CalEEMod and energy consumption modeling are included in **Appendix A-2**. The amount of operational fuel consumption was estimated using the CARB Emissions Factor 2021 (EMFAC2021) computer program which provides projections for typical daily fuel (i.e., diesel and gasoline) usage in the County, and the Project's annual vehicle miles traveled (VMT) outputs from CalEEMod. The estimated construction fuel consumption is based on the Project's construction equipment list timing/ phasing, and hours of duration for construction equipment, as well as vendor, hauling, and construction worker trips.

The Project's estimated energy consumption is summarized in **Table H: Project and Countywide Energy Consumption**. As shown in **Table H**, the Project's energy usage would constitute an approximate 0.0184 percent increase over the County's typical annual electricity consumption and an approximate 0.0123 percent increase over the County's typical annual natural gas consumption. The Project's off-road construction equipment diesel fuel consumption, on-road construction fuel consumption, and operational vehicle fuel consumption would increase San Bernardino County's consumption by 0.4543 percent, 0.0177 percent, and 0.0927 percent, respectively.

Table H: Project and Countywide Energy Consumption

Energy Type	Project Annual Energy Consumption[1]	San Bernardino County Annual Energy Consumption[2]	Percentage Increase Countywide[2]
Electricity Consumption	2,970 MWh	16,180,811 MWh	0.0184%
Natural Gas Consumption	68,976 therms	561,360,617 therms	0.0123%
Fuel Consumption			
Construction Off-Road Fuel Consumption[3]	111,562 gallons	24,554,746 gallons	0.4543%
Construction On-Road Fuel Consumption[3]	202,819 gallons	1,147,766,168 gallons	0.0177%
Operational Automotive Fuel Consumption[3]	1,033,060 gallons	1,113,988,859 gallons	0.0927%

Source: Air Quality, Greenhouse Gas, and Energy Technical Memorandum (Michael Baker, June 2023).
Notes:
1. As modeled in CalEEMod version 2022.1.
2. The project increases in electricity and natural gas consumption are compared to the total consumption in San Bernardino County in 2021. The project increases in automotive fuel consumption are compared with the projected Countywide off-road fuel consumption in 2024 (start of construction), on-road fuel consumption in 2024 (start of construction), and on-road fuel consumption in 2026 (operational year). Countywide fuel consumption is projected from the California Air Resources Board EMFAC2021 model. San Bernardino County electricity consumption data source: California Energy Commission, *Electricity Consumption by County*, http://www.ecdms.energy.ca.gov/elecbycounty.aspx, accessed October 27, 2023. San Bernardino County natural gas consumption data source: California Energy Commission, *Gas Consumption by County*, http://www.ecdms.energy.ca.gov/gasbycounty.aspx, accessed October 27, 2023.
3. Project fuel consumption calculated based on CalEEMod results. Countywide fuel consumption is projected from the California Air Resources Board EMFAC2021 model.

MWh = Megawatt-hours

Construction Energy Use. Project construction would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass. Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during grading, paving, building construction, and architectural coatings. Fuel energy consumed during construction would be temporary and would not represent a significant demand on energy resources. In addition, some incidental energy conservation would occur during construction through compliance with State requirements that heavy-duty diesel equipment not in use for more than 5 minutes be turned off. Project construction equipment would also be required to comply with the latest USEPA and CARB engine emissions standards. These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Due to increasing transportation costs and fuel prices, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

The Project-related incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes, and manufactured or processed materials (e.g., lumber and glass) would not substantially increase demand for energy compared to overall local and regional demand for construction materials. As indicated in **Table H**, the Project's off-road fuel consumption and on-road fuel consumption from construction would be approximately 111,562 gallons and 202,819 gallons, respectively. The Project's off-road fuel consumption and on-road fuel consumption from construction would increase off-road construction equipment diesel fuel use and on-road vehicle fuel consumption in the County by approximately 0.4543 percent and 0.0177 percent, respectively. As such, construction would not have a significant effect on the local and regional energy supplies. It is noted that construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual

project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or State. Therefore, construction fuel consumption would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature. As such, the impact would be **less than significant.**

Operational Energy Use. Table H provides an estimate of the daily fuel consumed by vehicles traveling to and from the Project site. Based on the Traffic Study, the proposed Project would result in approximately 3,728 average daily trips, with 228 A.M. peak hour trips and 288 P.M. peak hour trips. As indicated in **Table H**, Project operational daily trips are estimated to consume approximately 1,033,060 gallons of fuel per year, which would increase the County's automotive fuel consumption by 0.0927 percent. The Project does not propose any unusual features that would result in excessive long-term operational fuel consumption.

The key drivers of transportation-related fuel consumption are job locations/commuting distance and many personal choices on when and where to drive for various purposes. Those factors are outside of the scope of the design of the proposed Project. However, the Project would provide electric vehicle charging stations and bicycle parking in compliance with the CALGreen Code, and the closest bus stop is located approximately 400 feet west of the Project site along West Lugonia Avenue. Inclusion of electrical vehicle charging stations would encourage and support the use of electric vehicles, and the availability of other alternative transportation methods would reduce the petroleum fuel consumption associated with operation of the Project. Therefore, fuel consumption associated with Project-related vehicle trips would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. The impact would be less than significant.

The California Energy Commission (CEC) developed 2020 to 2035 forecasts for energy consumption and peak demand in support of the 2021 Integrated Energy Policy Report (IEPR) for each of the major electricity and natural gas planning areas and the State based on the economic and demographic growth projections.20 CEC forecasts that the statewide annual average growth rates of energy demand between 2021 and 2030 would be 1.3 percent to 2.3 percent for electricity and less than a 0.1 percent to 0.8 percent increase for natural gas.[21] As shown in **Table H**, operational energy consumption of the Project would represent a less than 0.02 percent increase in electricity and natural gas consumption over the current Countywide usage, which would be significantly below CEC's forecasts and the current Countywide usage. Therefore, the Project would be consistent with the CEC's energy consumption forecasts and would not require additional energy capacity or supplies. Additionally, the Project would consume energy during the same time periods as other residential projects. As a result, the Project would not result in unique or more intensive peak or base period electricity demand.

The proposed Project would be required to comply with the most current Title 24 Building Energy Efficiency Standards, which provide minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards significantly reduces energy usage. The Title 24 Building Energy Efficiency Standards are updated every 3 years and become more stringent between each update. The Project would also incorporate sustainable building design features in accordance with Title 24 and

[20] California Energy Commission. 2022. *Final 2021 Integrated Energy Policy Report Volume IV California Energy Demand Forecast*, February. Annual average growth rates of electricity demand and natural gas per capita demand are shown in Figure 10 and Figure 14, respectively.

[21] Ibid.

CALGreen Code standards, such as reserving area on the roof for future solar panels and installing energy efficient appliances. The 2022 Title 24 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, strengthen ventilation standards, and more.

Furthermore, the electricity provider, SCE, is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 60 percent of total procurement by 2030. Renewable energy is generally defined as energy that comes from resources which are naturally replenished within a human timescale such as sunlight, wind, tides, waves, and geothermal heat. The increase in reliance of such energy resources further ensures that new development projects will not result in the waste of the finite energy resources.

Therefore, the Project would not cause wasteful, inefficient, and unnecessary consumption of building energy during Project operation, or preempt future energy development or future energy conservation. The impact would be **less than significant.**

b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less Than Significant Impact

Discussion of Effect: The City does not have an adopted renewable energy or energy efficiency plan. State and regional plans for renewable energy and energy efficiency include the California Energy Commission's IEPR, California Public Utilities Commission's Energy Efficiency Strategic Plan (CPUC Strategic Plan), Title 24 standards, and CALGreen standards. The Project would be required to comply with Title 24 and CALGreen standards and incorporates all applicable energy efficiency measures. Energy efficiency measures typical for residential projects include installation of energy efficient windows, insulation, lighting, ventilation systems, and water efficient fixtures, conservation of roof areas for future installation of solar panels, as well as provision of electric vehicles charging infrastructure, among others. Compliance with Title 24 and CALGreen standards would also be consistent with the CPUC Strategic Plan strategies and the IEPR building energy efficiency recommendations, which would ensure the Project's conformance with the State's energy reduction goals. It should be noted that the Project is consistent with the *City of Redlands Climate Action Plan*, which includes City-specific policies related to energy; refer to Section 3.8. Greenhouse Gas Emissions, **Table L**. As such, the proposed Project would result **in less than significant impacts** associated with renewable energy or energy efficiency plans.

3.7 GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication #42.

No Impact

Discussion of Effects: The Project site is within a seismically active region; however, it is not located within the boundaries of an Earthquake Fault Zone for fault rupture hazard as defined by the Alquist-Priolo Earthquake Fault Zoning Act of 1972.[22] In addition according to the Geotechnical Engineering Investigation Report prepared for the proposed Project (**Appendix D: Geotechnical Engineering Investigation Report**)[23], the nearest active fault with known surface rupture is the Live Oak Canyon Fault (part of the Crafton Hills Fault Zone) located approximately 3.25 miles southwest of the Project site, and the San Andreas Fault is located approximately 4.25 miles northeast of the Project site. As such, the Geotechnical Engineering Investigation Report determined that the potential for ground rupture at the site is low. In the absence of any on-site active faults, **no impact** related to fault rupture would occur on the Project site, and no mitigation is required.

ii. Strong seismic shaking?

Less Than Significant Impact

Discussion of Effects: The Project site is within a seismically active area, where earthquakes have the potential to produce very strong seismically related ground shaking during the anticipated operational life of the Project. As previously discussed, the nearest known active fault is the Live Oak Canyon Fault located approximately 3.25 miles to the southwest of the Project site.[24]

The extent of ground shaking associated with an earthquake is dependent upon the size of the earthquake and the geologic material of the underlying area. All future construction and development within the Project site would be required to comply with applicable provisions of the California Building Code (CBC) and the City's building regulations in effect at the time when building permit applications are submitted. Proper engineering design and construction in conformance with the CBC standards and Project-specific geotechnical recommendations (**Standard Condition GEO-1**) would ensure that seismic ground shaking would be **less than significant.** No mitigation is required.

Standard Condition: No mitigation is required; however, the following Standard Condition is a regulatory requirement that would be implemented to ensure impacts related to seismic activity remain less than significant.

[22] Moore Twining Associates, Inc. 2022. *Geotechnical Engineering Investigation, The Neighborhoods at Lugonia Village Northwest Corner of West Lugonia Avenue and Karon Street, Redlands, California, Project Number: H02901.01.* February 11.

[23] Ibid.

[24] Ibid.

Standard Condition GEO-1 Compliance with applicable California Building Code and Project-specific geotechnical recommendations. Prior to the approval of grading and/or building permits, the Applicant shall provide evidence to the City of Redlands for review and approval that on-site structures, features, and facilities have been designed and will be constructed in conformance with applicable provisions of the California Building Code in effect at the time of City review and the recommendations cited in the Project-specific Geotechnical Engineering Investigation Report. This measure shall be implemented to the satisfaction of the Director of the City of Redlands Department of Development Services, Building and Safety Division, or designee.

Adherence to the measures identified in the Geotechnical Engineering Investigation Report as well as the current CBC in effect at the time of City review and other requirements identified and required by the City would ensure ground shaking hazards remain **less than significant.** No mitigation is required.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact

Discussion of Effects: Liquefaction is a phenomenon that occurs when strong seismic ground shaking causes soils to collapse from a sudden loss of cohesion and undergo a transformation from a solid to a liquefied state. There are three basic factors that must exist concurrently in order for liquefaction to occur:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions;
- A relatively loose silty and/or sandy soil; and
- A relatively shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that would allow positive pore pressure generation.

According to the Project-specific Geotechnical Engineering Investigation Report, no groundwater was encountered to the maximum depth drilled of 51.5 feet below ground surface (bgs). Because groundwater is anticipated to be much deeper than 50 feet BSG and has historically not been encountered in the upper 50 feet bgs, the Geotechnical Engineering Investigation Report determined that liquefaction is not a concern at the Project site. However, the analysis indicated that the granular soil layers encountered on the Project site would be subject to dry seismic settlement of between 3 and 6 inches and primarily occurred between the depths of approximately 12 and 42 feet bgs. The Geotechnical Engineering Investigation Report noted that the estimated seismic settlements may be excessive for support of wood-frame structures on conventional shallow spread foundations; however, the proposed Project includes the construction of a rigid post-tensioned slab which would provide foundation design that can tolerate the anticipated seismic settlements.

Secondary effects of seismic activity which may occur at the site include ground subsidence, ground lurching, and lateral spreading. The probability of occurrence of each type of seismically induced ground failure is dependent on the severity of the earthquake, distance from the fault, topography of the site, subsoil, and groundwater conditions at the site. According to the Project-specific Geotechnical Engineering Investigation Report the potential for ground lurching, lateral spreading, and similar seismic-

related ground failure is considered low with implementation of the Project-specific geotechnical recommendations. Through incorporation of **Standard Condition GEO-1**, impacts from seismically induced ground failure would be **less than significant,** and no mitigation is required.

iv. Landslides?

No Impact

Discussion of Effects: According to the City's General Plan EIR, the Project site is not located within an area susceptible to landslides.[25] Due to the Project site's flat topography, the absence of significant nearby slopes or hills in the area planned for development, and the planned site grading in accordance with **Standard Condition GEO-1**, **no impacts** from landslides or slope instabilities at the Project site would occur. No mitigation is required.

b. Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact

Discussion of Effects: Construction at the Project site would disturb surface soils and make them susceptible to erosion from wind and water. In order to address the potential for erosion, the Project is required to implement Best Management Practices (BMPs) during the construction phase that would reduce erosion in accordance with National Pollutant Discharge Elimination System (NPDES) regulations. These BMPs would be selected as part of the Storm Water Pollution Prevention Plan (SWPPP), which is required to address erosion and discharge impacts associated with the proposed on-site grading.

The Project must also comply with the City's grading permit requirements, which would ensure that construction practices include measures to protect exposed soils such as limiting work to dry seasons, covering stockpiled soils, and use of straw bales and silt fences to minimize off-site sedimentation. In addition, the Project site would be covered with asphalt, concrete, and landscaping materials during operations; therefore, soil erosion would be none to minimal. Compliance with State and federal requirements, as well as with City grading permit requirements, would ensure that the proposed Project would have a **less than significant** impact related to soil erosion or loss of topsoil. No mitigation is required.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less Than Significant Impact

Discussion of Effects: As discussed in Response 3.7(a)(iv) above, the Project site is not located within an area susceptible to landslides. Due to the Project site's flat topography, the absence of significant nearby slopes or hills, and the planned site grading in accordance with **Standard Condition GEO-1**, **no impacts** from landslides or slope instabilities at the Project site would occur. No mitigation is required.

As discussed in Response 3.7(a)(iii), no groundwater was encountered to the maximum depth drilled of 51.5 feet below the existing ground surface. Because groundwater is anticipated to be much deeper than

[25] City of Redlands. *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, SCH#: 2016081041,* Chapter 3.6: Geology, Soils, and Seismicity, *Figure 3.6-3: Landslide Potential.* July 21, 2017.

50 feet bgs and has historically not been encountered in the upper 50 feet bgs, groundwater is not anticipated to adversely affect the Project's proposed improvements. Based on the lack of shallow groundwater underlying the Project site, the potential for liquefaction to occur is considered low. However, the analysis indicated that the granular soil layers encountered on the Project site would be subject to dry seismic settlement of between 3 and 6 inches and primarily occurred between the depths of approximately 12 and 42 feet bgs. The Geotechnical Engineering Investigation Report noted that the estimated seismic settlements may be excessive for support of wood-frame structures on conventional shallow spread foundations; however, the proposed Project includes the construction of a rigid post-tensioned slab which would provide foundation design that can tolerate the anticipated seismic settlements. With implementation of the Project-specific geotechnical recommendations as detailed in the Geotechnical Engineering Investigation Report (**Standard Condition GEO-1**), the potential for lateral spreading, settlement, subsidence, and similar seismic-related ground failure at the Project site is considered low.

The earth underlying the Project site consists of silty sands extending to varying depths and generally overlying interbedded layers of poorly graded sands, poorly graded sands with silt, and additionally silty sand layers extending to the maximum depth explored (51.5 feet bgs). According to the Project-specific Geotechnical Engineering Investigation Report, these near surface soils are granular in nature, have a very low expansion potential, and are not susceptible to soil liquefaction during an earthquake event. Through incorporation of **Standard Condition GEO-1**, impacts from subsidence and/or collapse would be **less than significant**, and no mitigation is required.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant Impact

Discussion of Effects: As described above in Response 3.7(c), the near surface soils on the Project site have a very low expansion potential and are not anticipated to pose a hazard for the proposed Project. Therefore, the Project's impacts would be **less than significant,** and no mitigation is required.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact

Discussion of Effects: The proposed Project would be connected to existing wastewater collection and conveyance facilities owned and operated by the City. Therefore, septic tanks would not be necessary. Because the proposed Project would not include the installation of septic tanks or alternative wastewater disposal systems, **no impact** would occur. No mitigation is required.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation Incorporated

Discussion of Effect: According to the City's General Plan EIR, paleontological resources, including fossils, have been found in the Redlands area, and there is potential for paleontological finds to occur in remaining, unexcavated open space areas within and adjacent to the City of Redlands. Paleontological resources are the fossil remains or traces of past life forms, including both vertebrate and invertebrate

species, as well as plants. Vertebrate land mammal fossils have been discovered in parts of the City, including the fossils of a mammoth, ground sloth, camel, bison, horse, and deer. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. In the past, paleontological resources have been identified in the San Timoteo Canyon area.

The earth underlying the Project site consists of silty sands extending to varying depths and generally overlying interbedded layers of poorly graded sands, poorly graded sands with silt, and additionally silty sand layers extending to the maximum depth explored (51.5 feet bgs). Although the Project site is currently undeveloped, the site visit performed as part of the Geotechnical Engineering Investigation Report indicated some remnant elements of past structures and improvements on the site including a rectangular shaped open concrete structure and various concrete drainage structures. In addition, the Project site was historically used for orchard/agricultural purposes. As such, the Project site was likely subject to periodic ground disturbance associated with agricultural use of the site and development of the various structures. In addition, the Project site is approximately 2.6 miles from San Timoteo Canyon, the nearest area of paleontological significance identified in the City's General Plan EIR. Therefore, it is unlikely that unique paleontological resources are present on the Project site.

No unique geologic features are present on the Project site, and no unique geologic features would be destroyed, either directly or indirectly, as a result of the proposed Project's actions.

General Plan Objective OSC-7.1, Policy P3 requires the appropriate protection, evaluation, and recovery of any potential paleontological resource to a less than significant level. Although the Project site and surrounding area have likely been disturbed due to past agricultural use and no known paleontological resources are known to exist on site, because of the Citywide potential to encounter paleontological resources, unknown/undiscovered resources could be encountered during on-site grading or construction activities. **Mitigation Measure GEO-1** has been identified to reduce any paleontological resource impacts to a **less than significant** level.

Mitigation Measure GEO-1 Prior to commencement of any grading activity on the Project site, the Applicant shall retain a qualified paleontologist, subject to the review and approval of the Director of the City of Redlands Department of Development Services, Planning Division, or designee. The qualified paleontologist shall be present at the pre-grade conference and shall establish procedures for paleontological resource surveillance and procedures for temporarily halting and redirecting work to permit sampling and identification and evaluation of fossils. If the resources are deemed to be significant, the paleontologist shall determine appropriate actions, in cooperation with the Applicant, which ensure proper exploration and/or salvage. Full-time monitoring and salvage efforts will be necessary whenever previously undisturbed sediments are being disturbed (8 hours per day during grading or trenching activities). Once the earth moving is 50 percent completed, monitoring may be reduced if no fossils are being recovered. The paleontologist shall be empowered to temporarily divert or direct grading operations to facilitate assessment and salvaging of exposed fossils. Collection and processing of matrix samples through fine screens will be necessary to salvage any micro-vertebrate remains.

In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP).

With implementation of **Mitigation Measure GEO-1,** impacts to paleontological resources would be **less than significant**.

3.8 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The discussion and analysis provided in this section is based on the Michael Baker International *Air Quality, Greenhouse Gas, and Energy Technical Memorandum* dated June 22, 2023 (refer to **Appendix A-1** of this IS/MND).

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact.

Discussion of Effects: *CEQA Guidelines* Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Appendix G of the *CEQA Guidelines* includes significance thresholds for greenhouse gas (GHG) emissions. A project would normally have a significant effect on the environment if it would do either of the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions. Similarly, the SCAQMD, CARB, or any other State or regional agency have not yet adopted a numerical significance threshold for assessing GHG emissions that is applicable to the Project. Since there is no applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the Project's impacts related to GHG emissions focuses on its consistency with statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the Project's GHG-related impacts on the environment.

Notwithstanding, for informational purposes, the analysis also calculates the amount of GHG emissions that would be attributable to the Project using recommended air quality models, as described below. The primary purpose of quantifying the Project's GHG emissions is to satisfy *CEQA Guidelines* Section 15064.4(a), which calls for a good-faith effort to describe and calculate emissions. The estimated emissions inventory is also used to determine if there would be a reduction in the Project's incremental contribution of GHG emissions as a result of compliance with regulations and requirements adopted to implement plans for the reduction or mitigation of GHG emissions.

- The proposed Project would result in direct and indirect emissions of CO_2, N_2O, and CH_4, and would not result in other GHGs that would facilitate a meaningful analysis. Therefore, this analysis focuses on these three forms of GHG emissions. Direct Project-related GHG emissions include emissions from construction activities, area sources, and mobile sources, while indirect sources include emissions from energy consumption, water demand, and solid waste generation. The most recent version of the California Emissions Estimator Model (CalEEMod), version 2022.1, was used to calculate Project related GHG emissions. **Table I: Estimated Project Greenhouse Gas Emissions** presents the estimated CO_2, N_2O, and CH_4 emissions of the proposed Project. CalEEMod outputs are contained within **Appendix A-2**.

Table I: Estimated Project Greenhouse Gas Emissions

Source	Pollutant Emissions (MT per year)[1]				
	CO_2	CH_4	N_2O	Refrigerants	CO_2e [2]
Direct Emissions					
Construction[4]	119.17	0.01	0.01	0.12	121.13
Area Sources	121.00	<0.01	<0.01	0.00	121.00
Mobile Sources	6,131.00	0.28	0.30	9.57	6,235.00
Total Direct Emissions[3]	6,371.17	0.30	0.32	10.34	6,477.78
Indirect Emissions					
Energy Sources	932.0	0.08	0.01	0.00	836.00
Solid Waste	9.02	0.30	0.00	0.00	31.50
Water Demand	34.70	0.74	0.02	0.00	58.40
Total Indirect Emissions[3]	875.72	1.12	0.03	0.00	925.90
Total Project-Related Emissions[3]					**7,403.68**
Emissions per Service Population per Year					**5.1**
City of Redlands CAP Year 2030 Service Population Threshold Per Year Capita Per Year					**6.00**
Exceed Threshold?					**No**

Source: Air Quality, Greenhouse Gas, and Energy Technical Memorandum (Michael Baker, June 2023).

1. Emissions Calculated using CalEEMod Version 2022.1
2. Carbon dioxide equivalent values calculated using the U.S. Environmental Protection Agency, *Greenhouse Gas Equivalencies Calculator*, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator, accessed October 27, 2023.
3. Totals may be slightly off due to rounding.
4. Total project construction GHG emissions equate to 3,634.00 $MTCO_2e$. However, construction emissions are amortized over the lifetime of the project (assumed to be 30 years) and added to operational GHG emissions consistent with SCAQMD's guidance.

CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT = metric tons
N_2O = nitrous oxide

Construction Activities. Construction activities associated with the proposed Project would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As mentioned above, the SCAQMD and the City do not provide a separate GHG significance threshold for construction emissions; rather, applicable guidance specifies that construction emissions should be amortized over 30 years (a typical project's lifetime), added to the Project's operational emissions, and that total compared to the GHG significance threshold.

As shown in **Table I**, construction of the proposed Project would generate a total of approximately 3,634.00 $MTCO_2e$ per year. The amortized construction emissions would be approximately 121.13 $MTCO_2e$ per year (refer to the CalEEMod output in **Appendix A-2** for details)[26]. In accordance with SCAQMD's guidance, **Table I** shows the amortized construction emissions added to the Project operational emissions and the total emissions compared to the GHG significance threshold to evaluate the Project's operational emissions impact, as discussed below.

Since there is no separate GHG significance threshold for construction emissions, Project-level and cumulative GHG emissions during construction activities alone would be **less than significant**, and no mitigation is required.

Operational GHG Emissions. Long-term GHG emissions are typically generated from mobile sources (e.g., cars, trucks, and buses), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include Project-generated vehicle and truck trips to and from the Project site. Area-source emissions would be associated with activities such as landscaping and maintenance on the Project site.

Waste source emissions generated by the proposed Project include energy generated by land filling and other methods of disposal related to transporting and managing Project-generated waste. Refrigerant source emissions are generated by the substances used in equipment for air conditioning and refrigeration. Operational GHG emissions associated with the proposed Project are shown in **Table I** above.

As shown in **Table I**, the total amount of Project-related GHG emissions from direct and indirect sources combined would total 7,403.68 $MTCO_2e$/year. Based on an average household size of 2.68 for the City of Redlands[27], the Project's 541 residential units would result in a direct population increase of approximately 1,450 persons. As such, the Project's emission would be 5.1 $MTCO_2e$ per service population

[26] Since the time this analysis was prepared, the construction year has changed to 2025. As the analysis year increases, emission factors decrease due to the natural turnover of older equipment being replaced by less polluting equipment and emission regulations becoming more stringent. Therefore, the construction schedule utilized in the analysis represents a more conservative analysis.

[27] Ibid.

per year, which is below the CAP's Year 2030 6.0 $MTCO_2e$ per service population per year target. As such, impacts would be **less than significant.**

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact

Discussion of Effects: The GHG plan consistency analysis provided below is based on the Project's consistency with the City's General Plan and Climate Action Plan (CAP), SCAG's 2020-2045 RTP/SCS, and CARB's 2022 Scoping Plan. The General Plan contains goals and principles to reduce GHG emissions in the City. The 2020-2045 RTP/SCS is a regional growth management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The 2020-2045 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2022 Scoping Plan identifies strategies to achieve carbon neutrality by 2045 or earlier.

SCAG 2020-2045 RTP/SCS. On September 3, 2020, the Regional Council of SCAG formally adopted the 2020-2045 RTP/SCS. The 2020-2045 RTP/SCS includes performance goals that were adopted to help focus future investments on the best-performing projects, as well as different strategies to preserve, maintain, and optimize the performance of the existing transportation system. **Table J: Consistency with the 2020-2045 RTP/SCS** shows the Project's consistency with these five strategies found within the 2020-2045 RTP/SCS. As shown therein, the proposed Project would be consistent with the GHG emission reduction strategies contained in the 2020-2045 RTP/SCS.

Table J: Consistency with the 2020-2045 RTP/SCS[1]

Reduction Strategy	Applicable Land Use Tools	Project Consistency Analysis
Focus Growth Near Destinations and Mobility Options		
• Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations. • Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets. • Plan for growth near transit investments and support implementation of first/last mile strategies. • Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses. • Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods. • Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations). • Identify ways to "right size" parking requirements and promote alternative	Center Focused Placemaking, Priority Growth Areas (PGAs), Job Centers, High Quality Transit Areas (HQTAs), Transit Priority Areas (TPAs), Neighborhood Mobility Areas (NMAs), Livable Corridors, Spheres of Influence (SOIs), Green Region, Urban Greening.	**Consistent.** The proposed Project would involve a mixture of multi-family, townhomes, and single-family residential development on undeveloped land. The Project site is located in an urbanized area and within walking and biking distance of existing residential and commercial uses. As such, the proposed Project's future residents would enjoy greater access to work, educational, and other destinations, reducing commute times and distances, and thereby reducing greenhouse gas emissions associated with transportation. Therefore, the Project would focus growth near destinations and mobility options. The Project would be consistent with this strategy.

Table J: Consistency with the 2020-2045 RTP/SCS[1]

Reduction Strategy	Applicable Land Use Tools	Project Consistency Analysis
parking strategies (e.g., shared parking or smart parking).		
Promote Diverse Housing Choices		
• Preserve and rehabilitate affordable housing and prevent displacement. • Identify funding opportunities for new workforce and affordable housing development. • Create incentives and reduce regulatory barriers for building context sensitive accessory dwelling units to increase housing supply. • Provide support to local jurisdictions to streamline and lessen barriers to housing development that supports reduction of greenhouse gas emissions.	PGA, Job Centers, HQTAs, NMAs, TPAs, Livable Corridors, Green Region, Urban Greening.	**Consistent.** As discussed above, the Project would provide three types of residential development at different price points: multi-family residences, townhomes, and single-family residences. As such, the Project would be consistent with this strategy. In addition, the Applicant is providing affordable housing in accordance with the City's adopted Inclusionary Housing Program.
Leverage Technology Innovations		
• Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking/drop-off space. • Improve access to services through technology—such as telework and telemedicine as well as other incentives such as a "mobility wallet," an app-based system for storing transit and other multi-modal payments. • Identify ways to incorporate "micro-power grids" in communities, for example solar energy, hydrogen fuel cell power storage and power generation.	HQTAs, TPAs, NMAs, Livable Corridors.	**Consistent.** The Project would install electric vehicle charging stations and provide bike storage spaces in accordance with the 2022 Title 24 standards and CALGreen Code. Therefore, the proposed Project would leverage technology innovations to promote alternative modes of transportation and help the City, County, and State meet their GHG reduction goals. The Project would be consistent with this strategy.
Support Implementation of Sustainable Policies		
• Pursue funding opportunities to support local sustainable development implementation projects that reduce greenhouse gas emissions. • Support statewide legislation that reduces barriers to new construction and that incentivizes development near transit corridors and stations. • Support local jurisdictions in the establishment of Enhanced Infrastructure Financing Districts (EIFDs), Community Revitalization and Investment Authorities (CRIAs), or other tax increment or value capture tools to finance sustainable infrastructure and development projects, including parks and open space. • Work with local jurisdictions/communities to identify opportunities and assess barriers to implement sustainability strategies.	Center Focused Placemaking, PGAs, Job Centers, HQTAs, TPAs, NMAs, Livable Corridors, SOIs, Green Region, Urban Greening.	**Consistent.** As previously discussed, the proposed Project would install electric vehicle charging stations and provide bike storage spaces to promote alternative modes of transportation. Further, the Project would comply with sustainable development practices included in the 2022 Title 24 standards and CALGreen Code, including installation of vanpooling and carpooling parking spaces, installation of high-efficient lighting, and implementation of water-efficiency irrigation and drought-tolerant landscaping. Thus, the Project would be consistent with this strategy.

Table J: Consistency with the 2020-2045 RTP/SCS[1]

Reduction Strategy	Applicable Land Use Tools	Project Consistency Analysis
• Enhance partnerships with other planning organizations to promote resources and best practices in the SCAG region. • Continue to support long range planning efforts by local jurisdictions. • Provide educational opportunities to local decisions makers and staff on new tools, best practices and policies related to implementing the Sustainable Communities Strategy.		
Promote a Green Region		
• Support development of local climate adaptation and hazard mitigation plans, as well as project implementation that improves community resiliency to climate change and natural hazards. • Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration. • Integrate local food production into the regional landscape. • Promote more resource efficient development focused on conservation, recycling, and reclamation. • Preserve, enhance, and restore regional wildlife connectivity. • Reduce consumption of resource areas, including agricultural land. • Identify ways to improve access to public park space.	Green Region, Urban Greening, Greenbelts and Community Separators.	**Consistent.** The proposed Project consists of a residential development in an urbanized area and would not interfere with regional wildlife connectivity or convert agricultural land. The Project would be required to comply with 2022 Title 24 standards and CALGreen Code, which would help reduce energy consumption and reduce GHG emissions. Thus, the Project would support resource-efficient development that reduces energy consumption and GHG emissions. The Project would be consistent with this strategy.

Source: Air Quality, Greenhouse Gas, and Energy Technical Memorandum (Michael Baker, January 2023).

[1] Southern California Association of Governments, 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy – Connect SoCal, September 3, 2020.

2022 CARB Scoping Plan. The 2022 Scoping Plan identifies reduction measures necessary to achieve the goal of carbon neutrality by 2045 or earlier. Actions that reduce GHG emissions are identified for each Assembly Bill (AB) 32 inventory sector. Provided in **Table K: Consistency with the 2022 Scoping Plan: AB 32 GHG Inventory Sectors,** is an evaluation of applicable reduction actions/strategies by emissions source category to determine how the Project would be consistent with or exceed reduction actions/strategies outlined in the 2022 Scoping Plan.

Table K: Consistency with the 2022 Scoping Plan: AB 32 GHG Inventory Sectors

Actions and Strategies[1]	Project Consistency Analysis
Smart Growth/ Vehicles Miles Traveled (VMT)	
Reduce VMT per capita to 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045	**Consistent.** The proposed Project would involve a mixture of multi-family, townhomes, and single-family residential development on undeveloped land. The Project site is in an urbanized area and within walking and biking distance of existing residential and commercial uses. As such, the proposed Project's future residents would enjoy greater access to work, educational and other destinations, reducing VMT. As such, the Project would be consistent with this action.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030.	**Consistent**. The Project is anticipated to include natural gas heating and/or cooking on-site. The City of Redlands has not adopted an ordinance or program limiting the use of natural gas for on-site cooking and/or heating. However, if adopted, the Project would comply with the applicable goals or policies limiting the use of natural gas equipment in the future. As such, the Project would be consistent with this action.
Non-combustion Methane Emissions	
Divert 75% of organic waste from landfills by 2025.	**Consistent**. The Project would be required to recycle and compost 75 percent of waste per AB 341. As such, the Project would be consistent with this action.

Source: Air Quality, Greenhouse Gas, and Energy Technical Memorandum (Michael Baker, June 2023).

[1] California Air Resources Board, *2022 Scoping Plan*, November 16, 2022.

General Plan and Climate Action Plan. The City adopted both the General Plan and CAP on December 5, 2017. The CAP has been prepared concurrently with the updated General Plan, reflecting the City's most current land use and transportation strategy, and GHG implications of various General Plan's goals and principles. The CAP is designed to provide discrete actions to operationalize the General Plan policies that help with GHG reduction. As demonstrated in **Table L: Consistency with General Plan and Climate Action Plan**, the Project is consistent with the goal(s) related to GHG emissions reduction in the General Plan and Climate Action Plan. Additionally, the Project would not exceed the Year 2030 emissions target of 6.0 $MTCO_2e$ per capita per year described in **Table I**.

Table L: Consistency with General Plan and Climate Action Plan

Goal/principle	Project Consistency
General Plan Sustainable Community Element[1]	
Goal: Serve as an environmental steward; ensure that residents enjoy clean air and water; make efficient use of energy, water, and land resources; and grow in a manner in which increased population does not negatively impact resources. • 8-P.8: Promote sustainability by reducing the community's greenhouse gas (GHG) emissions and fostering green development patterns- including buildings, sites, and landscapes. • 8-P.9: Undertake initiatives to enhance sustainability by reducing the community's GHG emissions.	**Consistent.** The proposed Project would involve a mixture of multi-family, townhomes, and single-family residential development on undeveloped land. The proposed Project would comply with the 2022 Title 24 Building Energy Efficiency Standards. The Project would promote alternative mode of transportation by providing electric vehicle charging spaces and bike storage spaces. As such, the Project would ensure that the increased population associated with the proposed Project would not negatively impact resources. The Project would be consistent with this goal.
Climate Action Plan[2]	
The climate action plan aims to reduce GHG emissions by reducing VMT through the following categories: bikeway system improvements, pedestrian improvements and increased connectivity, traffic calming, parking facilities and policies, transportation improvement.	**Consistent.** The Project site is in an urbanized area and within walking and biking distance of existing residential and commercial uses. Additionally, the proposed Project site is within a half mile of a bus stop for OmniTrans Route 15. The Project would also comply with Title 24 and the CalGreen Code, which would be required to be electric vehicle ready. As such, the Project would be consistent with the CAP's GHG reduction measures.

Source: Air Quality, Greenhouse Gas, and Energy Technical Memorandum (Michael Baker, June 2023).
1. City of Redlands, *City of Redlands General Plan*, *Chapter 8, Sustainable Community*, December 5, 2017.
2. City of Redlands, *City of Redlands Climate Action Plan*, adopted December 5, 2017.

Summary. In summary, the consistency analyses provided above demonstrate that the proposed Project complies with the plans, policies, regulations, and strategies outlined in the City's General Plan (and CAP), SCAG's 2020-2045 RTP/SCS, and CARB's 2022 Scoping Plan. Therefore, the Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing emissions of GHGs. Impacts would be **less than significant.**

3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g.	Expose people or structures, directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	☐	☐	☒	☐

The following hazards and hazardous materials analysis was obtained from the *Phase I Environmental Site Assessment (ESA)* (**Appendix E-1: Phase I ESA**) prepared by Hillman Consulting on June 28, 2021, and the *Limited Phase II Subsurface Investigation* (**Appendix E-2: Limited Phase II Subsurface Investigation**) prepared by Hillman Consulting on August 16, 2023.

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact

Discussion of Effects: Construction of the Project has the potential to create a hazard to the public or environment through the routine transportation, use, and disposal of construction-related hazardous materials such as fuels, soils, solvents, and other materials. These materials are typical of materials delivered to construction sites. The United States Department of Transportation regulates the transport of hazardous materials and waste in connection with construction of the Project and would require carriers to register with the Department of Toxic Substances Control (DTSC).

Occupation of the proposed residential uses is expected to utilize relatively small amounts of hazardous materials, such as chemicals associated with fuel for landscape maintenance equipment, solvents, cleaning products, pesticides/fertilizers, and other similar chemicals. These materials are substantially similar to household chemicals and solvents already in general and wide use throughout the City and in the vicinity of the Project site. Compliance with all applicable federal, State, and local regulations would ensure the Project would have a **less than significant impact** to the public or environment from the routine transportation, use, and disposal of hazardous materials. No mitigation is required.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact

Discussion of Effects: A *Phase I ESA* (**Appendix E-1**) was prepared for the Project site in accordance with the standards and procedures outlined in the American Society for Testing and Materials E 1527-13, as applicable. The Phase I ESA included a review of official government databases concerning the locations of known hazardous materials releases for the purpose of identifying any listings suggesting a potential impact to the Property due to presence or migration of hazardous substances and/or petroleum products. The report provided a search of standard environmental record sources for listings of the Project site, adjoining properties and sites within the surrounding area. In addition, the Project site and the surrounding area were evaluated via the State Water Resources Control Board (SWRCB) GeoTracker database, the Department of Toxic Substances Control's (DTSC) EnviroStor database, and the Hazardous Waste and Substances Sites (Cortese) list for the purposes of identifying recognized environmental conditions or historical recognized environmental conditions.

"Recognized environmental condition" means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate

governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions. "Historical Recognized environmental condition" means an environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently. If a past release of any *hazardous substances or petroleum products* has occurred in connection with the property, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a case closed letter or equivalent), this condition shall be considered a *historical recognized environmental condition*.

Based on historic records, the Project site was utilized for agriculture between 1930 and 1985 and has remained vacant from 2002 to present day. The surrounding properties have been utilized for agriculture starting in 1938 and residential uses were introduced to the surrounding sites in 1959. After 1994, agricultural use of the surrounding sites ceased. Commercial uses were introduced in 2002, and the surrounding sites have been utilized for commercial and residential uses until present day. No evidence was identified indicating improper storage, disposal, or application of hazardous materials, and a review of available aerial photographs did not show improvements such as hangars, tanks, or large barns that would indicate significant storage, formulation, and handling of hazardous materials.

The *Phase I ESA* identified one recognized environmental condition (REC) in connection to the proposed Project. As the Project site was historically used as orchards identified from as early as 1930 until 1985, there is potential for concentrated pesticides in shallow soils. Therefore, historical agricultural use is considered to be a REC. Additionally, five properties associated with hazardous environmental conditions were identified within a one-mile radius of the Project site, as detailed in **Table M: Summary of Identified Hazardous Sites Near the Project Site**. The potential for vapor encroachment was considered in assessing whether or not a REC exists in connection with the Project site when reviewing applicable databases concerning the locations of known hazardous materials releases. In review of these properties, the *Phase I ESA* considered whether these properties constitute a REC or vapor encroachment condition (VEC) in connection with the Project site.

Each of the sites listed in **Table M** have been granted environmental closure regarding potential contaminants of concern or appropriate cleanup activities and no REC of VEC is suspected in connection with the Project site. Because the historical agricultural use at the Project site is considered to be a REC, the *Phase I ESA* recommended a *Limited Phase II ESA* be performed for the Project site to determine potential for soil contamination due to historical pesticide application.

A *Limited Phase II Subsurface Investigation* (**Appendix E-2**) was prepared for the Project site by Hillman Consulting on August 16, 2023. On July 31, 2023, Hillman collected thirty-six (36) shallow soil samples from multiple soil borings on the Project site. The samples were submitted to A&R Laboratories of Ontario California for laboratory analysis. The results of the analysis indicated detectable concentrations of several pollutants including 4,4'-DDD, 4,4'-DDT, and 4,4'- DDE, alpha-Chlordane, and Dieldrin. However, none of the concentrations exceeded their respective conservative screening levels for residential or commercial applications. The analysis also indicated samples had low levels of heavy metals including the following: barium, chromium, cobalt, copper, lead, molybdenum, nickel, vanadium, lead, and zinc. The detected concentrations were compared to the EPA Regional Screening Levels (RSLs), and none of the heavy metal concentrations exceeded their respective conservative screening levels for residential or commercial applications or the DTSC-established background concentrations. As such, the REC associated with the Project site would not create a significant hazard to the public or the environment with implementation of the proposed Project.

Table M: Summary of Identified Hazardous Sites Near the Project Site

Property	Environmental Condition	Location Relative to the Project Site	REC[1]/VEC[2] Discussion
The Home Depot Store #1013/1151 West Lugonia Avenue	The CERS database lists this site as a permitted industrial facility for stormwater discharges and a chemical storage facility. Multiple violations were listed and have since achieved compliance.	415 feet southwest of the Project site.	Based on the details provided, the *Phase I ESA* determined that neither a REC nor VEC are suspected in connection with the Project site.
7-Eleven Inc. #33292/1161 West Lugonia Avenue/1390 East Arrow Highway	This site is an active gas station listed as a hazardous waste generator with several administrative violations that have since achieved compliance. The violations were related to failure to submit and maintain compete and current Certification of Financial Responsibility or other mechanism for financial assurance.	443 feet southwest of the Project site.	Based on the details provided, the *Phase I ESA* determined that neither a REC nor VEC are suspected in connection with the Project site.
Teledyne Battery Products/ 840 West Brockton Avenue	This site appears on the EnviroStor database with a "No Further Action" determination dated September 7, 2018.	1,296 feet southeast off the Project site.	Based on distance, the *Phase I ESA* determined that the listing is not considered to be a REC nor VEC in connection with the Project site.
Texas Street Pumping Plant/1401 Texas Street	This site is listed on the LUST database due to diesel contamination of the soil. The leak was first discovered September 1, 1991 and the case received regulatory closure on July 16, 2004.	953 feet east of the Project site.	Based on the media impacted and the regulatory closure granted, the *Phase I ESA* determined that the listing is not considered to be a REC or VEC in connection with the Project site.
Teledyne/840 West Brockton Avenue	This site is listed with a regulatory closure on August 19, 2005, and the CERS database identifies the site as under a cleanup program.	1,296 feet southeast of the Project site.	Based on the details provided, the *Phase I ESA* determined that neither a REC nor VEC are suspected in connection with the Project site.

Source: Hillman Consulting. 2021. *Phase I ESA*. Pages 19 – 21.
[1] REC = Recognized Environmental Condition
[2] VEC = Vapor Encroachment Condition

A review of the Hazardous Waste and Substances Sites (Cortese) List revealed one active federal superfund site, the Newmark Groundwater Contamination site. The site is an 8 square-mile area of groundwater contamination in the Bunker Hill Groundwater Basin in the City of San Bernardino. The site is defined by two contaminant plumes, the Newmark plume and the Muscoy plume. Remediation measures to inhibit migration of groundwater contamination into clean portions of the aquifer and limit the flow of additional contamination (groundwater extraction and treatment at the leading edge of the plume) are ongoing and are functioning as intended under federal, State, and municipal actions. Given

that the Project site is located hydrogeologically up-gradient of the Newmark plume, the remedial actions have been in effect since 1998 and continue to be monitored frequently by federal, State, and local officials, shallow groundwater is not present beneath the Project site, and the fact that the Project would receive potable water from the City's water system rather than groundwater wells, the Project site's proximity to the Newmark Groundwater Contamination site does not represent an environmental concern to the Project. Therefore, there are no Cortese listings that could potentially impact the Project site.

None of the properties/listings identified in the database review completed as part of the *Phase I* occurs on the Project site or has any activities or materials that would represent a significant risk to public health or safety (e.g., on-site storage, leaking tanks, approaching groundwater contamination plume) on the Project site. Although the Project site currently contains an REC associated with historical pesticide use at the Project site, results from the *Limited Phase II Subsurface Investigation* determined that no pesticide concentration that exceed applicable screening levels are present on the Project site. Further, the Project site is not subject to vapor migration from any on-site or off-site sources. Therefore, impacts would be **less than significant**, and no mitigation measures would be required.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact

Discussion of Effects: The nearest school facility in proximity to the Project site is Citrus Valley High School located at 800 West Pioneer Avenue in Redlands, approximately 0.5 mile to the southwest. The City works with the Redlands Unified School District (RUSD) concerning the design of roads and other public improvements in and around school sites, and is responsible for fire, police, and public safety concerns involving all facilities within the City, including both public and private schools.

Although the *Phase I ESA* indicated the Project site currently contains an REC associated with historical pesticide use at the Project site, the *Limited Phase II* prepared for the site determined that all pesticide concentrations were below applicable screening levels. Further, the Project site is not within one-quarter mile of an existing or proposed school. As such, the proposed Project would not emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **No impact** would occur, and no mitigation measures would be required.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact

Discussion of Effects: Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List has been compiled by the California Environmental Protection Agency Hazardous Materials Data Management Program. The DTSC compiles information from subsets of the following databases to make up the Cortese List:

1. The DTSC list of contaminated or potentially contaminated hazardous waste sites listed in the California Sites database;

2. The California State Water Resources Control Board listing of leaking underground storage tanks; and

3. The CalRecycle list of sanitary landfills that have evidence of groundwater contamination or known migration of hazardous materials.

None of the historical RECs identified in **Table M** occurs on the Project site or includes any activities or materials that would represent a significant hazard to the public or environment at the Project site. Therefore, **no impact** related to the Cortese List or other governmental databases would occur. No mitigation is required.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact

Discussion of Effects: The Project site is located approximately 2.2 mile southeast of San Bernardino International Airport and approximately 2.3 miles southwest of Redlands Municipal Airport. The Project site is located outside the Airport Compatibility Zones of San Bernardino International Airport and Redlands Municipal Airport.[28] **No impacts** related to the Project's vicinity to a public airport would occur. No mitigation is required.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact

Discussion of Effects: The proposed Project includes the design, construction, and maintenance of new residential units, roadways, and utilities in accordance with applicable standards associated with vehicular access, resulting in the provision of adequate emergency access and evacuation. Construction activities associated with the proposed Project would include the extension of Pennsylvania Avenue, which would either end in a in a cul-de-sac just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street or would extend from Karon Street west to Tennessee Street, creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. Such improvements are not expected to result in road closures; however, temporary lane closures may be required to complete construction activities. As a condition of Project approval, the Applicant would be required to provide lane closure requirements to the City and local emergency service responders in advance of such closures. The proposed Project would develop two access points onto the site from West Lugonia Avenue (a signalized intersection at New York Street/West Lugonia Avenue and a right-in/right-out driveway on the southwest corner of the Project site), one access point from the proposed Pennsylvania Avenue extension, and one access point from Karon Street. The design of the proposed Project would be reviewed by the City's Fire and Police Departments prior to the issuance of building permits. Adherence to the emergency access measures required by the City would ensure a **less than**

[28] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Figure 3.7-2 (Airport Hazards). City of Redlands. July 21, 2017.

significant impact related to implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan. No mitigation is required.

g. Expose people or structures to a significant risk of loss, injury or death involving wildland fires.

Less Than Significant Impact

Discussion of Effects: The Project site is within a LRA Non-Very High Fire Hazard Severity Zone according to CALFIRE mapping.[29] The General Plan EIR, Figure 3.7-3, indicates that the Project site is located in an area designated as a Moderate Fire Level Threat.[30] No hillside areas or natural areas prone to wildfires are located in the immediate Project vicinity as this area of Redlands is urbanized with residential neighborhoods and commercial areas. Due to the nature of the Project vicinity, on-site and adjacent areas have minimal capability to support a wildfire. The proposed Project would be required to implement and abide to Redlands General Plan policies (specifically Policies 7-A.83 through 7-A.106) that promote fire safety through agency cooperation and management of risk factors; adhere to applicable building and fire codes; and implement existing programs such as weed abatement and education under the Redlands Fire Department; all of which would reduce the wildfire risk at the Project site. In addition, the proposed Project will be designed in accordance with current California Fire Code Standards, which include requirements for internal road widths, access points to the Project site, and construction fire suppression techniques. Proper enforcement of these existing regulations will ensure that implementation of the proposed Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Impacts would be **less then significant**, and no mitigation is required.

[29] CAL FIRE. Fire Hazard Severity Zones Maps, City of Redlands Map. Website: https://osfm.fire.ca.gov/media/5949/redlands.pdf (accessed October 27, 2023).

[30] City of Redlands, Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan, Chapter 3.7: Hazards and Hazardous Materials, Figure 3.7-3: Fire Hazards and Fire Safety Services.

3.10 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede substantial groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:				
i. Result in substantial erosion or siltation on or off site?	☐	☐	☒	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
iv. Impede or redirect flood flows?	☐	☐	☒	☐
d. Result in flood hazard, tsunami, or seiche zones, or risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

The following hydrology and water quality analysis was obtained from the *Preliminary Water Quality Management Plan* (**Appendix F-1: PWQMP**) prepared by DRC Engineering, Inc on September 5, 2023, and the *Conceptual Hydrology Study* (**Appendix F-2: Conceptual Hydrology Study**) prepared by DRC Engineering, Inc on June 26, 2023.

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less Than Significant Impact

Discussion of Effects: Pollutants of concern during construction include sediment, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked during construction. Any of these pollutants have the potential to be transported via storm water runoff into receiving waters (i.e., Santa Ana River Reach 5, 4, 3, 2, and 1 and Newport Slough).

Construction of the proposed Project would disturb approximately 11.68 acres. Because Project construction would disturb greater than 1 acre of soil, the Project would be subject to the requirements of the State Water Resources Control Board's (SWRCB) National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities (Order No. 2022-0057-DWQ, NPDES No. CAS000002) (Construction General Permit), which was adopted on September 8, 2022 and will become effective on September 1, 2023. The Project would also be required to comply with the City of Redlands Municipal Code Chapter 13.54. Chapter 13.54 prohibits land disturbance or construction activities without first obtaining coverage under the State Construction General Permit, development of a Storm Water Pollution Prevention Plan (SWPPP), and implementation of Best Management Practices (BMPs) to ensure that construction practices include measures to address pollutant discharge into storm drains. As specified in **Regulatory Compliance Measures HYD-1 and HYD-2** and as required by the Construction General Permit and City Municipal Code, the Construction Contractor would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP during construction activities. Construction BMPs would include, but not be limited to, erosion and sediment control (designed to minimize erosion and retain sediment on site), and good housekeeping practices to prevent spills, leaks, and discharge of construction debris and waste into receiving waters.

According to the Geotechnical Engineering Investigation prepared for the proposed project on February 11, 2022, by Moore Twining Associates, Inc., no groundwater was encountered to the maximum depth drilled of 51.5 feet below the existing ground surface. Excavation at the Project site during construction of the proposed Project is not anticipated to extend further than 10 feet bgs. Given the depth to groundwater, it is unlikely that excavation activities would have the potential to encounter groundwater. Therefore, groundwater dewatering is not anticipated to be required during construction activities.

With implementation of **Regulatory Compliance Measures HYD-1** and **HYD-2**, including preparation and implementation of a SWPPP and construction BMPs, impacts associated with the violation of water quality standards or waste discharge requirements during project construction would be less than significant, and no mitigation is required.

During operation, anticipated pollutants of concern associated with the proposed project include pathogens (bacterial/virus), nutrients (phosphorous and nitrogen), noxious aquatic plans, sediment, oil

and grease, trash and debris, pesticides and herbicides, organic compounds, and oxygen demanding compounds. The current impairments for receiving waters (i.e., Santa Ana River Reach 5, 4, 3, 2, and 1 and Newport Slough) include pathogens, copper, lead, and indicator bacteria. The Santa Ana Regional Water Quality Control Board has adopted a Total Maximum Daily Load (TMDL) implementation plan for pathogens, copper, lead, indicator bacteria, enterococcus, fecal coliform, and total coliform, which are applicable to the proposed Project.

The City of Redlands is a co-permittee under Santa Ana Regional Water Quality Control Board's (RWQCB) National Pollutant Discharge Elimination System (NPDES) Permit Waste Discharge Requirements for the San Bernardino County Flood Control District, the County of San Bernardino, and the Incorporated Cities of San Bernardino County Within the Santa Ana Region Area-Wide Urban Stormwater Runoff Management Program (Order No. R8-2010-0036, NPDES No. CAS618036) (San Bernardino County MS4 Permit).

The San Bernardino County MS4 Permit requires the preparation of project-specific WQMPs for priority projects. The proposed Project is considered a priority project because it involves the development of more than 10,000 square feet of impervious surface and because it includes more than 5,000 square feet of parking lots that would be exposed to stormwater runoff. As specified in **Regulatory Compliance Measure HYD-3** and as required by the San Bernardino County MS4 Permit, the Applicant would be required to prepare a Final WQMP. The Final WQMP would specify the Site Design, Source Control, Low Impact Development (LID), and Treatment Control BMPs that would be implemented to capture, treat, and reduce pollutants of concern in storm water runoff. Site Design BMPs are storm water management strategies that emphasize conservation and use of existing site features to reduce the amount of runoff and pollutant loading generated from a site. Source Control BMPs are preventative measures that are implemented to prevent the introduction of pollutants into storm water. LID BMPs mimic a project site's natural hydrology by using design measures that capture, filter, store, evaporate, detain, and infiltrate runoff rather than allowing runoff to flow directly to piped or impervious storm drains. Treatment Control BMPs are structural BMPs designed to treat and reduce pollutants in storm water runoff prior to releasing it to receiving waters.

A Preliminary WQMP has been prepared for the Project that details the following operational BMPs that would be implemented to reduce impacts to water quality from operation of the Project:

1. **Site Design BMPs** include minimizing impervious surface areas; preserving existing on-site drainage patterns; re-vegetating disturbed areas; minimizing unnecessary compaction in stormwater retention/infiltration basin/trench areas; utilizing vegetated drainage swales in place of underground piping or imperviously lined swales; and staking off areas that will be used for landscaping to minimize compaction during construction.

2. **Non-Structural Source Control BMPs** include education of property owners regarding potential impacts to downstream water quality; activity restrictions; landscape management BMPs consistent with the City of Redland's water efficient landscape requirements (Chapter 15.54 of the City's Municipal Code); BMP maintenance; compliance with City of Redlands stormwater ordinance (Chapter 13.54 of the City's Municipal Code); spill contingency plan; litter and debris control program; employee training on stormwater BMPs; catch basin inspection and cleanout program; and vacuum sweeping of private streets and parking lots.

3. **Structural Source Control BMPs** include storm drain signage and stenciling; trash and waste storage areas that are designed and constructed to reduce pollution introduction, efficient irrigation systems and landscape design; and finish grade of landscaped areas at a minimum of 1-2 inches below the top of the curb, sidewalk, or pavement.

4. **LID BMPs** include catch basins and curb inlets with filters and underground infiltration and detention systems.

With implementation of the proposed Project, the Project site would be divided into 4 drainage areas (DA) to manage stormwater runoff from the entire Project site. The 4 drainage areas are discussed below.

DA 1 would manage stormwater runoff from the portion of the Project site that includes the proposed apartments. Stormwater runoff from impervious areas (e.g., concrete, asphalt, and roofs) within DA 1 would be directed to proposed inlets with storm filters and discharged into one of the four proposed underground infiltration and detention chambers (underground chambers) via a storm drain pipe system. Overflows from the underground chambers (stormwater runoff volume that exceeds the storage volume of the underground chamber) would be directed off-site via a storm drain pipe and discharged along Lugonia Avenue through a sidewalk culvert.

DA 2 would manage stormwater runoff from the portion of the Project site that includes the proposed town homes. Stormwater runoff from impervious areas within DA 2 would be directed to proposed inlets with storm filters and discharged into one of the two proposed underground chambers via a storm drain pipe system. Overflows from the underground chambers would be directed off-site via a storm drain pipe and discharged onto the proposed Pennsylvania Avenue extension through a proposed inlet.

DAs 3 and 4 would manage stormwater runoff from the portion of the Project site that includes the proposed single-family homes. There is a high point within Karon Street, causing DA 3 to drain north towards Pennsylvania Avenue and DA 4 to drain south towards Lugonia Avenue. Stormwater runoff from impervious areas within DAs 3 and 4 would be directed to proposed inlets with storm filters and discharged into its respective proposed underground chamber via a storm drain pipe system. Overflows from the underground chamber that infiltrates and detains flows draining to the north within DA 3 would be discharged along Karon Street through a sidewalk culvert. Overflows from the underground chamber that infiltrates and detains flows draining to the south within DAs 3 and 4 would be discharged along Lugonia Avenue through a sidewalk culvert.

As part of the proposed Project, Pennsylvania Avenue would be extended from Karon Street to the westerly property line and 32 feet of right-of-way would be dedicated to the City. In addition, a 52-foot and a 22-foot right of -way width would be dedicated to the City at Lugonia Avenue. Ownership of the proposed sewer, water, and reclaimed water lines within the Pennsylvania Avenue extension would be transferred to the City. These areas are considered DA 5 and 6; however, they are not included in the Design Capture Volume calculations as they are considered off-site improvements owned and managed by the City.

The underground chambers within DA 1, 2, 3, and 4 would be designed to store and infiltrate the entire Design Capture Volume (DCV) (69,360 cubic feet) for the Project site in accordance with the County of San Bernardino's technical guidance for WQMPs. The DCV is the volume of stormwater runoff that must be captured and treated by stormwater BMPs.

Infiltration of stormwater could have the potential to affect groundwater quality. As discussed above, the Project includes site design, source control, and LID BMPs, including catch basins and curb inlets with storm filters to capture trash and debris to reduce pollutants of concern in stormwater prior to entering the underground chambers and infiltrating into the soil. Furthermore, when storm water is infiltrated, soil and plants absorb and filter pollutants and reduce the potential for pollutants of concern to reach groundwater. As specified in **Regulatory Compliance Measure HYD-3**, a Final WQMP would be prepared in compliance with the San Bernardino County MS4 Permit prior to or during final design, which would ensure that the Project design would adequately target pollutants of concern in stormwater runoff before infiltrating into the soil.

With implementation of **Regulatory Compliance Measure HYD-3**, which requires adherence to the San Bernardino County MS4 Permit, including preparation of a Final WQMP to address pollutants of concern in storm water runoff, Project impacts associated with the violation of water quality standards or waste discharge requirements would be **less than significant**, and no mitigation is required.

Regulatory Compliance Measures. No mitigation is required; however, the following Regulatory Compliance Measures would be implemented to ensure that impacts related to water quality standards or waste discharge requirements would remain **less than significant**.

Regulatory Compliance Measure HYD-1

Construction General Permit. Prior to issuance of a grading permit, the Applicant shall obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities (Order No. 2022-0057-DWQ, NPDES No. CAS000002) (Construction General Permit). This shall include submission of Permit Registration Documents (PRDs), including a Notice of Intent for coverage under the permit to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS). The Applicant shall provide the Waste Discharge Identification Number (WDID) to the Director of the City of Redlands Department of Municipal Utilities and Engineering, or designee, to demonstrate proof of coverage under the Construction General Permit. Project construction shall not be initiated until a WDID is received from the SWRCB and is provided to the City, or designee. A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared and implemented for the proposed Project in compliance with the requirements of the Construction General Permit. The SWPPP shall identify construction Best Management Practices (BMPs) to be implemented to ensure that the potential for soil erosion and sedimentation is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities. Upon completion of construction and stabilization

of the site, a Notice of Termination shall be submitted via SMARTS.

Regulatory Compliance Measure HYD-2 Prior to the commencement of any land disturbing activities, the Applicant shall obtain coverage under the Construction General Permit and develop a Stormwater Pollution Prevention Plan to the City for review and approval that incorporates Best Management Practices to protect water quality during construction activities pursuant to Section 13.54 of the City Municipal Code.

Regulatory Compliance Measure HYD-3 Prior to issuance of a grading permit, the Applicant shall submit a Final Water Quality Management Plan (Final WQMP) to the Director of the City of Redlands Department of Development Services review and approval in compliance with the requirements of the Santa Ana RWQCB's NPDES Permit Waste Discharge Requirements for the San Bernardino County Flood Control District, the County of San Bernardino, and the Incorporated Cities of San Bernardino County Within the Santa Ana Region Area-Wide Urban Stormwater Runoff Management Program (Order No. R8-2010-0036, NPDES No. CAS618036) (San Bernardino County MS4 Permit). The Final WQMP shall specify the BMPs to be incorporated into the Project design to target pollutants of concern in storm water runoff from the Project site and the necessary operation and maintenance activity for each BMP. The City shall ensure that the BMPs specified in the Final WQMP are incorporated into the final Project design. The proposed BMPs specified in the Final WQMP shall be incorporated into the grading and development plans submitted to the City for review and approval. Project occupancy and operation shall be in accordance with the schedule outlined in the WQMP.

Compliance with all applicable federal, State, and local laws regulating surface and groundwater quality, as well as implementation of **Regulatory Compliance Measures HYD-1, HYD-2**, and **HYD-3**, the Project would result in a **less than significant impact** associated with water quality standards and/or waste discharge, and no mitigation is required.

b. Substantially deplete groundwater supplies or interfere with groundwater recharge such that may impede substantial groundwater management of the basin?

Less Than Significant Impact

Discussion of Effects: According to the *Geotechnical Engineering Investigation Report* (**Appendix D**) prepared for the proposed Project, no groundwater was encountered to the maximum depth drilled of 51.5 feet below the existing ground surface. Excavation at the Project site during construction of the

proposed Project is not anticipated to extend further than 10 feet bgs. Based on depth to groundwater, groundwater dewatering activities are not anticipated during project construction. Furthermore, according to the Project-specific Preliminary Water Quality Management Plan, soil compaction would be minimized during construction, which would promote natural infiltration during construction activities. Therefore, construction impacts related to a decrease in groundwater supplies or interference with groundwater recharge in a manner that may impede sustainable groundwater management would be **less than significant**, and no mitigation is required.

Once developed, the Project site would be approximately 80 percent impervious for a total impervious surface area of approximately 820,350 square feet. Currently, the Project site is 100 percent pervious; therefore, development of the proposed Project would increase impervious surface on the Project site approximately 820,350 square feet, which would decrease on-site infiltration. However, as described above in Response 3.10(a), the Project would include BMPs to collect and infiltrate stormwater at the Project site in accordance with the San Bernardino County MS4 Permit. Therefore, development of the proposed Project would not substantially decrease the amount of stormwater that infiltrates as compared to the existing conditions.

The Project site is located in Upper Santa Ana Valley Groundwater Basin. As discussed in Response 3.10(e) below, the Upper Santa Ana Valley Groundwater Basin is identified by the Department of Water Resources as a low priority basin and, therefore, a Groundwater Sustainability Plan is not required for this basin. While groundwater provides the City with approximately 70 percent of its water supply, the City has sufficient supplies to meet current and future development consistent with its General Plan through the year 2035. As discussed in Section 3.19, Utilities and Service Systems, based on the Project's anticipated water demand of 81.96 afy, the proposed Project would demand up to 0.4 percent of the City's surplus water in 2035 during the third year of a worst-case multiple dry year scenario.[31] Because the City has sufficient water supplies to meet current and future development within the City, the proposed Project's water demand would not deplete groundwater supplies.

Therefore, development of the proposed Project would not deplete groundwater supplies or interfere with groundwater recharge such that the Project may impede sustainable groundwater management. Impacts associated with groundwater supply and recharge are **less than significant,** and no mitigation is required.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:

i Result in substantial erosion or siltation on or off site?

Less Than Significant Impact

Discussion of Effect: In the existing condition, stormwater generally sheet flows from east to west across the Project site onto the adjacent undeveloped property. In the post-project condition, stormwater would be intercepted by multiple proposed catch basin and curb inlet and conveyed to one of eight proposed

[31] 69.95 afy of project demand ÷ 23,118 afy water surplus in 2035 during the third year of a worst-case multiple dry year scenario = 0.246 percent of the City's surplus water.

underground chambers where stormwater would infiltrate into the soil. Overflows from the underground chambers would be discharged to either Karon Street, Pennsylvania Avenue, and Lugonia Avenue.

Currently, the Project site consists of 100 percent pervious surfaces. During construction activities, soil would be exposed and disturbed, drainage patterns would be temporarily altered during grading and other construction activities, and there would be an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated rate. As discussed above in Response 3.10(a) and as specified in **Regulatory Compliance Measures HYD-1 and HYD-2**, the Project Applicant would be required to obtain coverage under the Construction General Permit, which requires preparation of a SWPPP. The SWPPP would detail Erosion Control and Sediment Control BMPs to be implemented during construction to minimize erosion and retain sediment on site. With compliance with the requirements of the Construction General Permit and with implementation of the construction BMPs, construction impacts related to on-site and off-site erosion or siltation would be **less than significant**, and no mitigation is required.

Implementation of the proposed Project would increase the amount of impervious surface area on the Project site by 80 percent. An increase in impervious surface area increases the rate and volume of runoff during a storm, which can more effectively transport sediments to receiving waters. However, the impervious surface areas on the Project site would not be prone to on-site erosion or siltation because there would be no exposed soil. The remaining pervious surfaces on the Project site would be landscaped with vegetation that would stabilize the soil and promote infiltration, thereby minimizing on-site erosion and siltation. Furthermore, the Project would be required to implement **Regulatory Compliance Measure HYD-3**, which requires the preparation of a Final WQMP, in compliance with the San Bernardino County MS4 permit, and the implementation of Site Design, Source Control, and LID BMPs that minimize stormwater runoff.

With implementation of **Regulatory Compliance Measure HYD-3**, operational impacts related to on-site or off-site erosion or siltation would be **less than significant,** and no mitigation is required.

ii Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

iv Impede or redirect flood flows?

Less Than Significant Impact

Discussion of Effect: According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 06071C8704H (August 28, 2008), the Project site is not within a 100-year floodplain. The Project site is mapped within Zone X, which is characterized by FEMA as an area of minimal flood hazard.

As discussed above in Response 3.10(a), Project construction would comply with the requirements of the Construction General Permit and the City of Redlands Municipal Code. Furthermore, the Applicant would be required to prepare and implement a SWPPP (**Regulatory Compliance Measures HYD-1** and **HYD-2**). The SWPPP would specify construction BMPs to control and direct on-site surface runoff to ensure that Project construction does not increase the rate or amount of surface runoff or impede or redirect flood flows in manner that would result in on-site or off-site flooding. With implementation of a SWPPP and associated BMPs (**Regulatory Compliance Measures HYD-1** and **HYD-2**), construction impacts related to

a substantial increase in the rate or amount of surface runoff or impeding or redirecting flood flows in a manner that would result in on-site or off-site flooding would be **less than significant**, and no mitigation is required.

As stated in Response 3.10(c)(i) above, development of the Project would result in total impervious surface area of approximately 820,350 square feet (80 percent of the site), which would increase stormwater runoff and could potentially result in flooding. However, as discussed above, the Project site is not mapped within a 100-year floodplain and therefore would not impede or redirect flood flows. Additionally, the proposed LID BMPs (underground chambers), which have been designed to be consistent with the requirements of the San Bernardino County MS4 Permit (**Regulatory Compliance Measure HYD-3**), would capture and treat stormwater runoff consistent with the requirements of the San Bernardino County MS4 Permit. Compliance with the San Bernardino County MS4 Permit (**Regulatory Compliance Measure HYD-3**) would ensure that operational activities would not result in a substantial increase in the rate or amount of surface runoff or impede or redirect flood flows in a manner that would result in on- or off-site flooding, and impacts would be **less than significant**. No mitigation is required.

iii Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact

Discussion of Effect: As discussed above in Response 3.10(a), Project construction would comply with the requirements of the Construction General Permit and the City of Redlands's Municipal Code and would include the preparation and implementation of a SWPPP (**Regulatory Compliance Measures HYD-1 and HYD-2**). The SWPPP would specify construction BMPs to control and direct on-site surface runoff to ensure that storm water runoff from the construction site does not exceed the capacity of the stormwater drainage system and does not discharge polluted runoff during construction activities. With implementation of **Regulatory Compliance Measures HYD-1 and HYD-2**, construction impacts related to exceeding the capacity of the storm water drainage system or additional polluted runoff would be **less than significant**, and no mitigation is required.

As previously discussed, the Project site is undeveloped and there is no existing stormwater infrastructure on-site. Currently, stormwater runoff on the Project site sheet flows from east to west and discharges onto the adjacent undeveloped property. The proposed Project would increase the impervious surface area by 80 percent compared to existing conditions, which would increase stormwater runoff collected on the Project site and discharged off-site into the existing storm drainage system and receiving waters. However, as previously discussed, the proposed Project would capture and retain the required DCV and gradually release overflows to public streets so that stormwater runoff does not exceed the capacity of the existing stormwater system pursuant to the requirements of the San Bernardino County MS4 Permit (**Regulatory Compliance Measure HYD-3).** Additionally, as discussed in Response 3.10(a), the proposed Project would implement operational BMPs to reduce pollutants of concern in stormwater runoff in compliance with the County of San Bernardino MS4 permit (**Regulatory Compliance Measure HYD-3**).

With implementation of **Regulatory Compliance Measure HYD-3**, operational impacts related to the creation or contribution of storm water runoff that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff would be **less than significant**, and no mitigation is required.

d. Result in flood hazard, tsunami, or seiche zones, or risk release of pollutants due to project inundation?

Less Than Significant Impact

Discussion of Effect: As discussed in Response 3.10(c)(ii) above, the Project site is not within a 100-year flood zone; therefore, there is no risk of pollutants from the Project site due to Project inundation.

The Project site is approximately 51 miles northeast of the Pacific Ocean, and the Santa Ana Mountains are between the Project site and the Pacific Ocean. Based on the distance from the Pacific Ocean and the presence of an intervening mountain range, the Project site would not be susceptible to inundation from a tsunami.

Seiches are oscillations in enclosed bodies of water that are caused by a number of factors, most often wind or seismic activity. The nearest major water feature is Lake Perris, which is located approximately 14 miles south of the Project site.[32] Given the distance of large standing bodies of water from the Project site, there is no risk of a release of pollutants from the Project site due to seiche-related flooding. Based on the fact that the Project site is not located within a 100-year flood zone and is located a substantial distance from the Pacific Ocean and closest bodies of water, implementation of the Project would not result in a flood hazard, tsunami, or seiche risking release of pollutants due to Project site inundation. **No impacts** would occur, and no mitigation is required.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact

Discussion of Effect: The Project site is within the jurisdiction of the Santa Ana RWQCB. The Santa Ana RWQCB adopted a Water Quality Control Plan (i.e., Basin Plan) (January 1995, updated June 2019) that designates beneficial uses for all surface and groundwater within its jurisdiction and establishes the water quality objectives and standards necessary to protect those beneficial uses. The proposed Project would comply with the Construction General Permit and the existing San Bernardino County MS4 Permit, which requires preparation of a SWPPP, preparation of a Final WQMP, and implementation of construction and operational BMPs to reduce pollutants of concern in storm water runoff. Therefore, the proposed Project would not result in water quality impacts that would conflict with the Santa Ana RWQCB Basin Plan. Impacts related to a conflict with or obstruction of the implementation of a water quality control plan would be **less than significant,** and no mitigation is required.

The Sustainable Groundwater Management Act (SGMA) was enacted in September 2014. SGMA requires governments and water agencies located within high- and medium-priority groundwater basins to halt overdraft of the basins. SGMA requires the formation of local Groundwater Sustainability Agencies (GSAs), which are required to adopt Groundwater Sustainability Plans (GSPs) to manage the sustainability of the

[32] It should be noted that the Seven Oaks Reservoir is approximately 7 miles northeast of the Project site. The Seven Oaks Reservoir is considered a dry reservoir that serves mainly for flood protection to Orange, Riverside, and San Bernardino Counties. The reservoir is also used to impound water for groundwater recharge. If the Seven Oaks Reservoir was filled with enough water to experience a seiche during an earthquake, floodwaters would follow the Santa Ana River Wash, north of the Project site.

groundwater basins. The Project site is located within the Upper Santa Ana Valley Groundwater Basin. The Upper Santa Ana Valley Groundwater Basin is identified by the Department of Water Resources as a very low priority basin; therefore, development of a GSP or an approved GSP alternative is not required.[33]

As discussed previously, due to the depth to groundwater, it is not expected that any storm water that may infiltrate during construction would affect groundwater quality because the groundwater table is deep, and pollutants would be filtered prior to reaching groundwater. In addition, the proposed Project would be required to implement operational BMPs to treat storm water before it could reach groundwater. Further, pollutants in storm water are generally removed by soil through absorption as water infiltrates. Therefore, in areas of deep groundwater, there is more absorption potential and, as a result, less potential for pollutants to reach groundwater. Due to the depth to groundwater, it is not expected that any storm water that may infiltrate during construction or operation would affect groundwater quality because there is not a direct path for pollutants to reach groundwater.

Although the proposed Project would increase impervious surface area by 80 percent, which would decrease on-site infiltration, the proposed Project would collect and infiltrate the required DCV in accordance with the requirements of the San Bernardino County MS4 Permit. Therefore, the proposed Project would not substantially decrease on-site infiltration and groundwater recharge when compared to existing conditions. Therefore, the proposed Project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan, and impacts would be **less than significant**. No mitigation is required.

[33] California Department of Water Resources. 2016. Groundwater Exchange. Website: https://groundwaterexchange.org/basin/upper-santa-ana-valley-3/ (accessed October 27, 2023).

3.11 LAND USE AND PLANNING

Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Physically divide an established community?	☐	☐	☐	☒
b.	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

a. Physically divide an established community?

No Impact

Discussion of Effects: The Project site is located on the western end of an established neighborhood within the City of Redlands. The Project site is bordered by West Lugonia Avenue to the south, Karon Street and an existing residential community to the east, a dirt road and fallow agricultural land to the north, and fallow agricultural land to the west followed by Tennessee Street and SR-210. The proposed Project includes the construction of 451 apartment units, 72 townhome units, and 18 single-family homes for a total of 541 residential units on the Project site. In addition to the residential development, the proposed Project includes the construction of on-site recreational facilities and the extension of Pennsylvania Avenue along the northern boundary of the Project site. The proposed Project uses are consistent with the surrounding land uses to the east, which are primarily residential, so the proposed Project would integrate uniformly with the established residential uses surrounding the Project site.

The proposed Project would be served by existing public streets (West Lugonia Avenue, Karon Street, and Pennsylvania Avenue) and other infrastructure. The construction of the apartment and townhome neighborhoods would result in a proposed density of 27.2 du/acre and the construction of the single-family residences would result in a proposed density of 5.33 du/ac. The City's General Plan currently designates the portion of the Project site directly adjacent to Karon Street that would contain the single-family residences as *Low Density Residential,* which allows for densities up to 6.0 du/ac. The rest of the Project site is currently designated as *Commercial,* with a small area designated as *Park/Golf Courses.* As part of the proposed Project actions, a General Plan Amendment (GPA) to change the designation from *Commercial* and *Parks/Golf Courses* to *High Density Residential* will be required to permit the proposed higher housing densities of the apartment complex and townhome neighborhoods. The *High Density Residential* land use designation allows for up to 29 dwelling units per acre. The Project's proposed density is consistent with the applicable General Plan designation for the Project site and with the density of the surrounding residential neighborhoods. As such, the proposed Project can be seen as an extension of the existing residential neighborhood to the east. The proposed Project would not physically divide an established community, but rather extend an established community. **No impact** would occur, and no mitigation is required.

b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact

Discussion of Effects: The Project site's current zoning designation is East Valley Corridor Specific Plan/Special Development District (EV/SD). The purpose of the East Valley Corridor Specific Plan is to plan for large undeveloped areas along I-10 to facilitate future industrial, commercial and residential development in an orderly and aesthetic manner, provide a strong job base to support the local economy, and to ensure high-quality development through design guidelines and standards. The intent of the Special Development District is to provide alternative, more flexible site planning process which encourages creative and imaginative planning of administrative, professional, commercial or industrial, or mixed-use development within the framework of a single comprehensive plan. Single-family dwelling units on parcels of 20 acres or more are permitted as interim uses under the current EV/SD zoning. The EV/SD zoning does not permit, conditionally permit, or permit as an accessory use, higher residential densities. A zoning change from EV/SD to R-3 Multiple Family Residential will be required to permit the proposed densities of the apartment complex and townhome neighborhoods (27.2 units per gross acre), and a zoning change from EV/SD to R-1 Single Family Residential along Karon Street will be required to permit the proposed densities of the single-family detached residences (5.33 dwelling units per gross acre).

With approval of the zoning change to *R-3* and *R-1*, the proposed Project would not conflict with any land use plan, policy, or regulation adopted by the City. As detailed throughout this Initial Study, all impacts to the environment resulting from the proposed Project are subject to applicable mitigation and local, State and/or federal regulations, which would reduce those impacts to less than significant levels. Therefore, impacts related to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the General Plan, Specific Plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect are **less than significant**. No mitigation is required.

3.12 MINERAL RESOURCES

Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact.

Discussion of Effect: Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil-bearing rock, but excluding geothermal resources, natural gas and petroleum. Rock, sand, gravel and earth are also considered minerals by the Department of Conservation when extracted by surface mining operations. According to the *Redlands General Plan EIR* [34], the Project site is located within Mineral Resource Zone-2 (MRZ-2) where geologic data indicate that significant plain cement concrete (PCC)-grade aggregate resources are present. The Project site is also located in an aggregate resource sector designated by the State Mining and Geology Board (1987) as containing regionally significant PCC-grade aggregate resources. According to the City's General Plan EIR, the majority of the City's aggregate resources are concentrated along the Santa Ana River wash. In light of this, the City has adopted the Upper Santa Ana Wash Land Management and Habitat Conservation Plan, which accommodates the relocation and expansion of aggregate mining quarries, to help ensure long-term availability of high quality aggregate reserves located within the Santa Ana River Wash Planning Area for local and regional use. The Project site is outside the boundaries of the Upper Santa Ana Wash Land Management and Habitat Conservation Plan and not within an area designated for aggregate mining by the City, and access to the aggregate resources along the Santa Ana River wash would not be affected by proposed Project actions.

Any construction activities, such as grading or soil excavation, would not be at a depth where unknown mineral resources may be inadvertently discovered. Therefore, the development of the proposed Project would not result in the loss of available mineral resources. Therefore, development of the proposed

[34] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Final, SCH #2016081041.* Figure 3.11-1 (Mineral Resources). City of Redlands. July 21, 2017.

Project would have less than significant impacts related to the availability of mineral resources. No mitigation is required.

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact

Discussion of Effect: Please refer to Response 3.11(a). **No impact** related to mineral resources would occur. No mitigation is required.

3.13 NOISE

Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b.	Result in generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c.	For a project located within the vicinity of a private airstrip or airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The discussion and analysis provided here describes the potential short-term construction noise and vibration impacts associated with the proposed Project, as well as long-term operational noise and vibration impacts.

Characteristics of Sound. Sound is increasing in the environment and can affect quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations (or cycles per second) of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound and describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments.

Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike units of measurement that use a linear scale (e.g., inches or pounds), decibels use a scale based on powers of 10.

For example, 10 decibels (dB) is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound-pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source, such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in California are L_{eq} and the Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on dBA. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance, when assessing the annoyance factor, include the maximum instantaneous noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Another noise scale often used together with L_{max} in noise ordinances for enforcement purposes is noise standards in terms of percentile noise levels. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half of the time the noise level exceeds this level, and half of the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category, audible impacts, refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally involve a change of 3 dB or greater because that level has been found to be barely perceptible in exterior environments. The second category, potentially audible impacts, refers to a change in the noise level between 1 and 3 dB.

This range of noise levels has been found to be noticeable only in laboratory environments. The last category involves changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will potentially result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less-developed areas.

Table N: Definition of Acoustical Terms lists definitions of acoustical terms, and **Table O: Common Sound Levels and Their Noise Sources** shows common sound levels and their noise sources.

Table N: Definitions of Acoustical Terms

Term	Definition
Decibel, dB	A unit of noise level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted unless reported otherwise.)
L_2, L_8, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter during a designated time interval using fast-time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time; usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris 1991).

Table O: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near-Freeway Auto Traffic	70	Moderately Loud	Reference Level
Average Office	60	Quiet	½ as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	¼ as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	⅛ as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA (2004).

Fundamentals of Ground-borne Vibration:

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items sitting on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves. Although the perceptibility threshold is approximately 65 vibration velocity decibels (VdB), human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. A vibration level that causes annoyance is well below the damage risk threshold for typical buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Although there are examples of ground-borne vibration causing interference out to distances greater than 200 feet, problems with both ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet from the vibration source based on the Federal

Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual*[35] (FTA Manual). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, construction of the project could result in ground-borne vibration that may be perceptible and annoying.

Ground-borne vibration has the potential to disturb people and damage buildings. Although it is very rare for train-induced ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes (e.g., blasting and pile driving) to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). The RMS velocity is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. The vibration velocity level in decibels is defined as the following:

$$L_v = 20 \log_{10} [V/V_{ref}]$$

where "L_v" is the vibration velocity in decibels (VdB), "V" is the RMS velocity amplitude, and "V_{ref}" is the reference velocity amplitude, or 1 x 10-6 inches/second (in/sec) used in the United States.

Regulatory Settings

Federal Guidelines

Federal Transit Administration. Although Section 8.06.120 of the City's Municipal Code exempts construction activities during the permitted hours during weekdays and Saturdays, project construction noise was assessed using criteria from the FTA Manual[36]. The FTA Manual's Detailed Assessment Daytime Construction Noise Criteria for residential uses is 80 dBA L_{eq}. In addition, vibration standards included in the FTA Manual were used in this analysis because the City of Redlands does not have construction vibration damage criteria. **Table P: Construction Vibration Damage Criteria** provides the criteria for assessing the potential vibration building damage associated with construction activities.

Local Regulations

City of Redlands General Plan Noise Element[37]. The City of Redlands lists policies to meet the City's noise-related goals and has established a noise land use compatibility matrix shown in **Table Q: Noise/Land Use Compatibility Matrix and Interpretation** to assess the compatibility of proposed land uses along with interior and exterior noise standards for specific land uses shown in **Table R: Interior and Exterior Noise Standards**. The following are the applicable City policies.

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35 Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual*. FTA Report No. 0123. September. Website: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed October 27, 2023).

36 Ibid.

37 City of Redlands. General Plan 2035, Chapter 7. Website: https://www.cityofredlands.org/sites/main/files/file-attachments/07_healthy_community_low.pdf?1667249222 (accessed October 27, 2023).

Table P: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate L_V (VdB)[1]
Reinforced concrete, steel, or timber (no plaster)	0.50	102
Engineered concrete and masonry (no plaster)	0.30	98
Non-engineered timber and masonry buildings	0.20	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: *Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) re 1 µin/sec.
µin/sec = microinches per second
FTA = Federal Transit Administration
in/sec = inch/inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Table Q: Noise/Land Use Compatibility Matrix and Interpretation

Land Use Categories		Community Noise Equivalent Level (CNEL)						
Categories	**Uses**	**<**	**60**	**65**	**70**	**75**	**80**	**85**	**>**
RESIDENTIAL	Single Family, Duplex Multiple Family	A	C	C	C	D	D	D
RESIDENTIAL	Mobile Homes	A	C	C	C	D	D	D
COMMERCIAL Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
COMMERCIAL Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C
COMMERCIAL INDUSTRIAL INSTITUTIONAL	Office Building, Research & Dev., Professional Offices, City Office Building	A	A	A	B	B	C	D
COMMERCIAL Recreation INSTITUTIONAL Civic Center	Amphitheater, Concert Hall, Auditorium, Meeting Hall	B	B	C	C	D	D	D
COMMERCIAL Recreation	Childrens Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	A	B	B	B
COMMERCIAL General, Special INDUSTRIAL, INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
INSTITUTIONAL General	Hospital, Church, Library, Schools Classroom	A	A	B	C	C	D	D
OPEN SPACE	Parks	A	A	A	B	C	D	D
OPEN SPACE	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
AGRICULTURE	Agriculture	A	A	A	A	A	A	A

Zone A CLEARLY COMPATIBLE	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
ZONE B NORMALLY COMPATIBLE	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
ZONE C NORMALLY INCOMPATIBLE	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.
ZONE D CLEARLY INCOMPATIBLE	New construction or development should generally not be undertaken.

Source: City of Redlands General Plan Noise Element, Table 7-10. (December 2017).

Table R: Interior and Exterior Noise Standards

Land Use Categories	Community Noise Equivalent Level (CNEL) Energy Average	
	Interior[1]	Exterior[2]
Residential		
Single Family, Duplex, Multiple Family	45[3]	60
Mobile Home	---	60[4]
Commercial, Industrial, Institutional		
Hotel, Motel, Transit Lodging	45	65[3]
Commercial Retail, Bank, Restaurant	50	---
Office Building, Research & Development, Professional Offices, City Office Building	50	---
Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	---
Gymnasium (Multipurpose)	50	---
Sports Club	55	---
Manufacturing, Warehousing, Wholesale, Utilities	60	---
Movie Theaters	45	---
Institutional		
Hospitals, Schools classrooms	45	60
Open Space		
Parks	---	60

Source: City of Redlands General Plan Noise Element, Table 7-11 (December 2017).

[1] Indoor environment excludes bathrooms, toilets, closest, corridors.

[2] Outdoor environment limited to private yard of single family as measured at property line; multifamily private patio or balcony that is served by means of exist from inside; mobile home park; hospital patio; park picnic area; school playground; hotel and recreational area.

[3] Noise level requirement with open window if they are used to meet natural ventilation requirements.

[4] Exterior noise levels should be such that interior noise levels will not exceed 45 CNEL.

[5] Expect those areas affected by aircraft noise.

Policy 9.0e Use the criteria specified in Table 7-10 (**Table Q of this IS**) to assess the compatibility of proposed land uses with the projected noise environment, and apply the noise standards in Table 7-11 (**Table R of this IS**), which prescribe interior and exterior noise standards in relation to specific land uses. Do not approve projects that would not comply with the standards in Table 7-11 (**Table R**).

Policy 9.0v Consider the following impacts as possibly "significant":

- An increase in exposure of four or more dB if the resulting noise level would exceed that described as clearly compatible for the affected land use, as established in Table 7-10 (**Table Q**) and Table 7-11 (**Table R**);
- Any increase of 6 dB or more, due to the potential for adverse community response.

Policy 9.0w Limit hours for all construction or demolition work where site-related noise is audible beyond the site boundary.

City of Redlands Municipal Code.[38] Section 8.06.070 of the City's Municipal Code outlines the exterior noise standards for stationary noise sources and are shown below in **Table S: Maximum Permissible Exterior Sound Levels by Receiving Land Use**.

Table S: Maximum Permissible Exterior Sound Levels by Receiving Land Use

Receiving Land Use Category	Time Period	Noise Level (dBA)					
		Noise Standard	L_{50}[1]	L_{25}[2]	L_8[3]	L_2[4]	L_{max}[5]
Single-family residential districts	10:00 p.m. to 7:00 a.m.	50	50	55	60	65	70
	7:00 a.m. to 10:00 p.m.	60	60	65	70	75	80
Multifamily residential districts; Public space; institutional	10:00 p.m. to 7:00 a.m.	50	50	55	60	65	70
	7:00 a.m. to 10:00 p.m.	60	60	65	70	75	80
Commercial	10:00 p.m. to 7:00 a.m.	60	60	65	70	75	80
	7:00 a.m. to 10:00 p.m.	65	65	70	75	80	85
Industrial	Any time	75	--	--	--	--	--

Source: City of Redlands. Municipal Code, Section 8.06.070 (Exterior Noise Limits).

Note: Per the City of Redlands Municipal Code: *If the measured ambient level exceeds the allowable noise exposure standard within any of the first 4 noise limit categories above, the allowable noise exposure standard shall be adjusted in 5 dBA increments in each category as appropriate to encompass or reflect said ambient noise level. In the event the ambient noise level exceeds the 5th noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level. The ambient noise shall be measured at the same location along the property line with the alleged offending noise source inoperative. If the alleged offending noise source cannot be shut down, the ambient noise shall be estimated by performing a measurement in the same general area of the source but at a sufficient distance that the noise from the source is at least 10 dBA below the ambient in order that only the ambient level be measured. If the difference between the ambient and the noise source is 5 to 10 dBA, then the level of the ambient itself can be reasonably determined by subtracting a one decibel correction to account for the contribution of the source. In the event the alleged offensive noise contains a steady, audible tone such as a whine, screech, hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying informational content, the standard limits shall be reduced by 5 dBA.*

[1] The noise standard for a cumulative period of more than 30 minutes in any hour.
[2] The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour.
[3] The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour.
[4] The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour.
[5] The noise plus 20 dBA or the maximum measured ambient level for any period of time.

dBA = A-weighted decibels
L_{eq} = Equivalent continuous sound level

Section 8.06.090(F) of the City's Municipal Code prohibits the operation or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 6:00 p.m. and 7:00 a.m., including Saturdays, or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work by public service utilities, the city or another governmental entity. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with

[38] City of Redlands. 2023. Municipal Code. January. Website: https://codelibrary.amlegal.com/codes/redlandsca/latest/redlands_ca/0-0-0-5191 (accessed October 27, 2023).

exhaust and air intake silencers in proper working order, or suitable to meet the standards set forth herein.

Section 8.06.090(G) of the City's Municipal Code prohibits the operation or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet from the source if on a public space or public right-of-way. The City's Municipal Code defines the perception threshold to be a motion velocity of 0.01 inches per second over the range of 1 to 100 hertz (Hz).

Section 8.06.090(F) of the City's Municipal Code prohibits the operation or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 6:00 p.m. and 7:00 a.m., including Saturdays, or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work by public service utilities, the city or another governmental entity. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with exhaust and air intake silencers in proper working order, or suitable to meet the standards set forth herein.

Section 8.06.090(G) of the City's Municipal Code prohibits the operation or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet from the source if on a public space or public right-of-way.

Section 8.06.100 of the City's Municipal Code states that it is unlawful to operate any air conditioning or air handling equipment that exceeds sound levels shown in **Table S.**

Section 8.06.120(G) of the City's Municipal Code states that the noise standards shall not apply to noise sources associated with new construction, remodeling, rehabilitation or grading of any private property, provided such activities take place between the hours of 7:00 a.m. and 8:00 p.m. on weekdays, including Saturdays, with no activities taking place at any time on Sundays or federal holidays. All motorized equipment used in such activities shall be equipped with functioning mufflers.

Existing Settings

Surrounding Land Uses

Land uses surrounding the Project site include vacant land to the north, single-family residences to the east across Karon Street, vacant land and commercial uses to the south across Lugonia Avenue, and vacant land to the west.

Overview of the Existing Ambient Noise Environment

The existing noise sources in the vicinity of the Project site include traffic noise on traffic on SR-210, Lugonia Avenue, and Karon Street. Noise from motor vehicles is generated by engines, the interaction between the tires and the road, and the vehicles' exhaust systems. Other noise sources include commercial activities south of the Project site.

Ambient Noise Levels

Long-Term Noise Measurements

Three long-term (24-hour) noise level measurements were conducted from December 7 to December 8, 2022, using Larson Davis Spark dosimeters. **Table T: Long-Term Ambient Noise Monitoring Results** summarizes the results of the long-term noise level measurements along with a description of the measurement locations and noise sources that occurred during the measurements. As shown in **Table T**, the daytime noise levels ranged from 53.7 to 64.5 dBA L_{eq} and nighttime noise levels ranged from 50.0 to 65.9 dBA L_{eq}. The daytime maximum instantaneous noise level ranged from 69.6 to 90.0 dBA and the nighttime instantaneous maximum noise level ranged from 67.9 to 90.5 dBA. Also, the calculated CNEL levels at LT-1, LT-2, and LT-3 were 62.7, 66.8, and 67.3 dBA, respectively. The long-term noise level measurement survey sheets along with the detailed hourly L_{eq}, L_{max}, and minimum measured sound level (L_{min}) results are provided in **Appendix G-1**. **Figure 8: Noise Monitoring Locations** shows the long-term monitoring locations.

Table T: Long-Term Ambient Noise Monitoring Results

Monitor No.	Location	Noise Level (dBA)					Noise Sources
		Daytime		Nighttime		CNEL	
		L_{eq}	L_{max}	L_{eq}	L_{max}		
LT-1	Located on the southeast corner of Karon Street and Pennsylvania Avenue. On a utility pole. Approximately 22 ft from Pennsylvania Avenue centerline.	53.7-62.8	69.6-86.4	50.0-61.7	67.9-84.9	62.7	Traffic on Pennsylvania Avenue and Karon Street.
LT-2	1402 Karon Street. In front of a single-family home on a utility pole. Approximately 18 ft from Karon Street centerline.	57.7-64.5	74.8-90.0	54.9-65.9	74.7-90.5	66.8	Traffic on Karon Street.
LT-3	1141 Lugonia Avenue. At the parking lot of the Jack in the Box on a utility pole. Approximately 128 ft from Lugonia Avenue centerline.	59.2-63.7	73.8-81.2	56.7-63.0	72.1-79.7	67.3	Traffic on Lugonia Avenue and noise from vehicles exiting the Jack in the Box drive through.

Source: Compiled by LSA (2023).
Note: Long-term (24-hour) noise level measurements were conducted from December 7, 2022, to December 8, 2022.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

Existing Traffic Noise. The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108)[39] was used to evaluate traffic-related noise conditions along roadway segments in the vicinity of the Project site. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resulting noise levels are weighted and summed over 24-hour periods

[39] Federal Highway Administration (FHWA). 1977. *Highway Traffic Noise Prediction Model*, FHWA RD 77-108.

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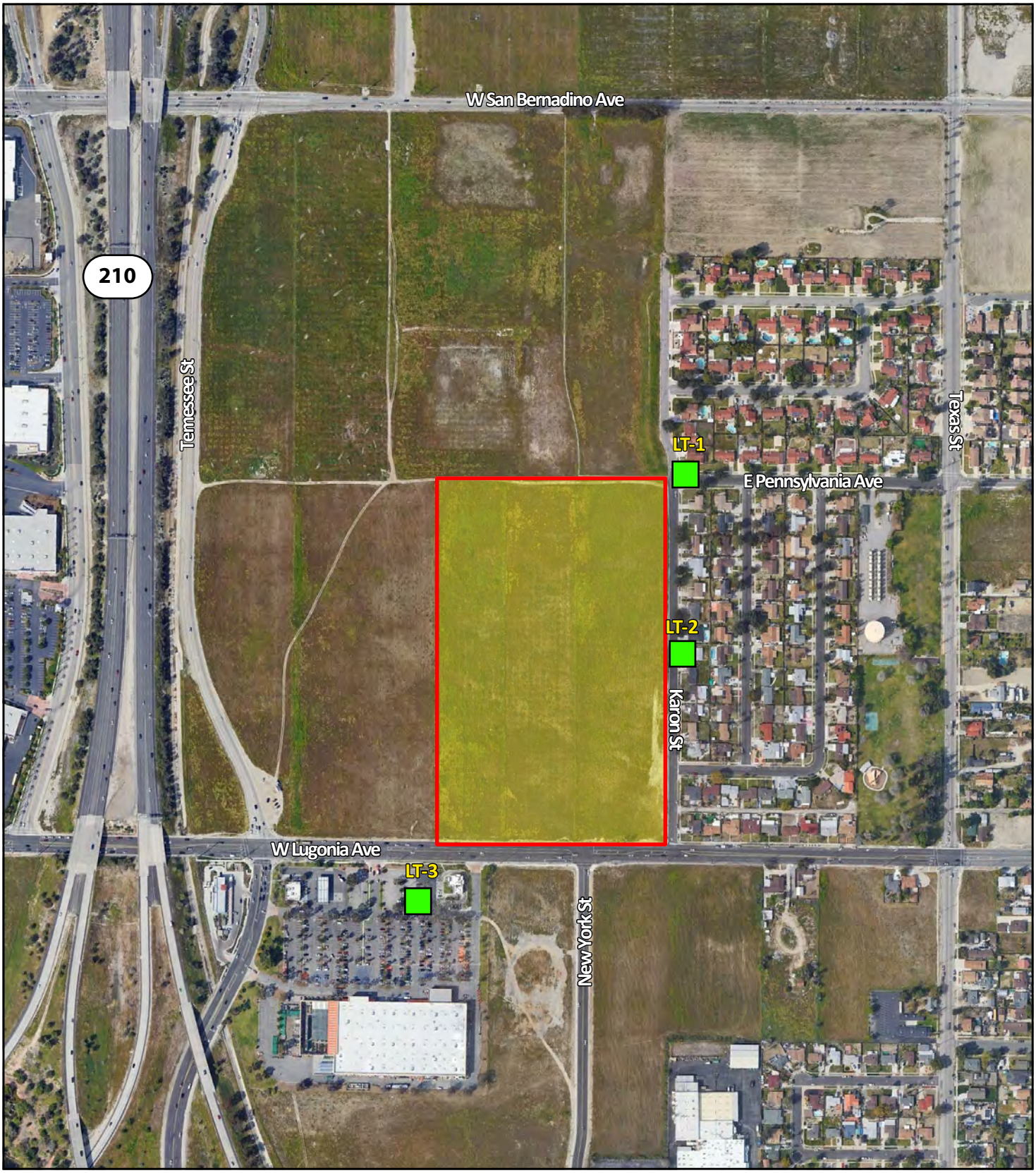

LSA

LEGEND

Project Site Boundary

LT-1 Long-Term Noise Monitoring Location

N

0 100 200
FEET

SOURCE: Google Earth 2021

FIGURE 8

The Neighborhoods at Lugonia Village

Noise Monitoring Locations

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to determine the CNEL values. The existing (2022) ADT volumes were obtained from the *Traffic Study for the Neighborhoods at Lugonia Village Project*[40]. The standard vehicle mix for Southern California roadways was used for roadways in the vicinity of the Project site. **Table U: Existing (2022) Traffic Noise Levels** shows the existing (2022) traffic noise levels on the nearby roadways. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided in **Appendix G-2**.

Table U: Existing (2022) Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Tennessee Street between San Bernardino Avenue and Pennsylvania Avenue (Future)	6,190	< 50	< 50	134	63.8
Tennessee Street between Pennsylvania Avenue (Future) and Lugonia Avenue	6,190	< 50	< 50	134	63.8
Tennessee Street between Lugonia Avenue and I-10 Westbound On/Off Ramps	14,590	< 50	100	315	67.5
Pennsylvania Avenue between Karon Street and Texas Street	910	< 50	< 50	< 50	51.9
Pennsylvania Avenue east of Texas Street	2,620	< 50	< 50	< 50	56.5
Karon Street north of Pennsylvania Avenue	250	< 50	< 50	< 50	49.6
Karon Street between Pennsylvania Avenue and Lugonia Avenue	1,065	< 50	< 50	< 50	55.9
Texas Street north of Pennsylvania Avenue	5,300	< 50	< 50	116	62.1
Texas Street between Pennsylvania Avenue and Lugonia Avenue	6,175	< 50	< 50	135	62.8
Texas Street south of Lugonia Avenue	9,080	< 50	66	197	64.5
Lugonia Avenue between Tennessee Street and Project Driveway	17,270	< 50	120	372	67.2
Lugonia Avenue between Project Driveway and New York Street	17,860	< 50	124	385	67.4
Lugonia Avenue between New York Street and Texas Street	15,520	< 50	108	335	66.8
Lugonia Avenue east of Texas Street	14,130	< 50	99	305	66.4
New York Street south of Lugonia Avenue	4,280	< 50	< 50	93	61.8

Source: Compiled by LSA (2023).

ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
I-10 – Interstate 10

[40] Michael Baker International. 2023. *Traffic Study for the Neighborhoods at Lugonia Village*. January 13.

a. Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact

Discussion of Effects:

Short-Term (Construction) Noise. Two types of short-term noise impacts could occur during construction on the Project site. First, construction crew commutes and the transport of construction equipment and materials to the Project site would incrementally increase noise levels on roadways leading to the site. The pieces of construction equipment for construction activities would move on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the vicinity of the Project site. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 feet would generate up to a maximum of 84 dBA), the effect on longer-term ambient noise levels would be small because the number of daily construction-related vehicle trips would be small compared to existing daily traffic volumes in the vicinity of the Project site. The proposed Project would generate a maximum of 1,552 passenger car equivalent (PCE) trips per day based on the California Emissions Estimator Model (CalEEMod) (Version 2022.1) results contained in **Appendix A-2**. Roadways that would be used to access the Project site include Lugonia Avenue and Tennessee Street. As shown in **Table U**, Lugonia Avenue and Tennessee Street have estimated existing ADT volumes of 14,130 and 6,190, respectively, near the Project site. Based on the information above, construction-related traffic noise would increase by up to 1.0 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, no short-term construction-related impacts associated with worker commutes and transport of construction equipment and material to the Project site would occur, and no noise reduction measures would be required.

The second type of short-term noise impact is related to noise generated from construction activities. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. The Project anticipates site preparation and grading, building construction, paving, and architectural coating phases of construction. These various sequential phases change the character of the noise generated on a project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. **Table V: Typical Construction Equipment Noise Levels** lists the L_{max} recommended for noise impact assessments for typical construction equipment included in the *FHWA Highway Construction Noise Handbook*[41], based on a distance of 50 feet between the equipment and a noise receptor.

[41] FHWA. 2006. *FHWA Highway Construction Noise Handbook*. Roadway Construction Noise Model, FHWA HEP-06-015. DOT-VNTSC-FHWA-06-02. NTIS No. PB2006-109012. August.

Table V: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor[1]	Maximum Noise Level (L_{max}) at 50 ft[2]
Backhoe	40	80
Compactor (ground)	20	80
Compressor (air)	40	80
Concrete Saw	20	90
Crane	16	85
Dozer	40	85
Dump Truck	40	84
Excavator	40	85
Flatbed Truck	40	84
Forklift	20	85
Front-End Loader	40	80
Generator (<25KVA, VMS signs)	50	70
Grader	40	85
Impact Pile Driver	20	95
Jackhammer	20	85
Pickup Truck	40	55
Paver	50	85
Pavement Scarafier	20	85
Pneumatic Tools	50	85
Pump	50	77
Rock Drill	20	85
Roller	20	85
Scraper	40	85
Tractor	40	84
Welder	40	73

Source: *FHWA Highway Construction Noise Handbook,* Table 9.1 (FHWA 2006).
Note: The noise levels reported in this table are rounded to the nearest whole number.
[1] The usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] The maximum noise levels were developed based on Specification 721.560 from the CA/T program to be consistent with the City of Boston, Massachusetts, Noise Code for the "Big Dig" project.
CA/T = Central Artery/Tunnel
FHWA = Federal Highway Administration
ft = foot/feet
L_{max} = maximum instantaneous noise level

Table W: Summary of Construction Phase, Equipment, and Noise Levels lists the anticipated construction equipment for each construction phase based on the CalEEMod (version 2022.1) results in **Appendix A-2**. Also, **Table W** shows the combined L_{max} and L_{eq} noise level at a distance of 50 feet for each construction phase along with the number of each construction equipment, acoustical usage factor, and the noise level (L_{max} and L_{eq}) for each construction equipment at a distance of 50 feet based on the quantity. As shown in **Table W**, construction noise levels would reach up to 97.4 dBA L_{max} (92.6 dBA L_{eq}) at a distance of 50 feet.

The closest residential property line is located immediately east of the Project site and is approximately 460 feet from the center of the Project site. At a distance of 460 feet, noise levels would reduce by 19.3 dBA compared to the noise level measured at 50 feet from the source. During the noisiest construction phase, the closest residential property line would be exposed to a construction noise level of 78.1 dBA L_{max} (97.4 dBA -19.3 dBA = 78.1 dBA) or 73.3 dB L_{eq} (92.6 dBA – 19.3 dBA = 73.3 dBA).

Table W: Summary of Construction Phase, Equipment, and Noise Levels

Construction Phase	Construction Equipment	Quantity	Reference Noise Level at 50 ft (dBA L_{max})	Acoustical Usage Factor[1] (%)	Noise Level at 50 ft (dBA)		Combined Noise Level at 50 ft (dBA)	
					L_{max}	L_{eq}	L_{max}	L_{eq}
Grading	Concrete Saw	1	90	20	90.0	83.0	97.3	92.6
	Crane	1	85	16	85.0	77.0		
	Tractor	2	84	40	87.0	83.0		
	Excavator	1	85	40	85.0	81.0		
	Grader	1	85	40	85.0	81.0		
	Dump Truck	1	84	40	84.0	80.0		
	Paver	2	85	50	88.0	85.0		
	Pavement Scarafier	1	85	20	85.0	78.0		
	Roller	2	85	20	88.0	81.0		
	Dozer	2	85	40	88.0	84.0		
	Scraper	1	85	40	85.0	81.0		
	Front-End Loader	2	80	40	83.0	79.0		
Building Construction	Concrete Saw	1	90	20	90.0	83.0	94.8	89.0
	Crane	1	85	16	85.0	77.0		
	Excavator	2	85	40	88.0	84.0		
	Grader	1	85	40	85.0	81.0		
	Forklift	1	85	20	85.0	78.0		
	Generator (variable message sign)	1	70	50	70.0	67.0		
	Pavement Scarafier	1	85	20	85.0	78.0		
	Front-End Loader	1	80	40	80.0	76.0		
Paving	Grader	1	85	40	85.0	81.0	92.3	87.9
	Paver	1	85	50	85.0	82.0		
	Roller	2	85	20	88.0	81.0		
	Generator (variable message sign)	1	70	50	70.0	67.0		
	Paver	1	85	50	85.0	82.0		
	Front-End Loader	1	80	40	80.0	76.0		
Architectural Coating	Compressor (air)	1	80	40	80.0	76.0	80.0	76.0

Source: Compiled by LSA (2023).

[1] The acoustical usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

Although the closest residence may be subject to temporary substantial ambient noise level increases, short-term construction noise levels would not exceed the FTA Manual construction noise criteria of 80 dBA L_{eq} for residential uses. Compliance with the City's Noise Ordinance would ensure that construction noise impacts would be minimized to the greatest extent feasible. **Standard Condition NOI-1** would limit construction hours to between the hours of 7:00 a.m. and 8:00 p.m. Monday through Saturday provided all motorized equipment is equipped with functioning mufflers pursuant to Sections 8.06.090F (Noise Disturbances Prohibited) and 8.06.120 (Exemptions) of the City's Municipal Code. If permission is obtained to construct outside of the permitted hours, compliance with the City's Municipal Code noise standards shown in **Table S** is required.

The following standard condition is a regulatory requirement that would be implemented to ensure that project construction noise would be minimized to the greatest extent feasible.

Standard Condition NOI-1 Compliance with Sections 8.06.090F (Noise Disturbances Prohibited) and Chapter 8.06.120 (Exemptions) of the City of Redland's (City) Municipal Code. Construction activities, including operating or causing the operation of any tools or equipment used in site preparation, construction, drilling, repair, alteration, grading, paving, and/or architectural coating shall be restricted to the hours of 7:00 a.m. to 8:00 p.m. Mondays through Saturdays, and are prohibited at any time on Sundays and holidays unless permission is given by the City and noise levels remain below the City's noise level standards.

All mobile or stationary internal combustion engine-powered equipment or machinery shall be equipped with exhaust and air intake silencers in proper working order and shall be maintained so that vehicles and their loads are secured from rattling and banging.

With implementation of **Standard Condition NOI-1**, construction noise impacts would be **less than significant.** No mitigation measures are required.

Long-Term (Operational) Traffic Noise

The FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108)[42] was used to evaluate traffic-related noise conditions along roadway segments in the vicinity of the Project site. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resulting noise levels are weighted and summed over 24-hour periods to determine the CNEL values. The existing (2022) ADT volumes without and with the Project were obtained from the *Traffic Study for the Neighborhoods at Lugonia Village Project* (Traffic Study)[43]. The standard vehicle mix for Southern California roadways was used for roadways in the vicinity of the Project site as shown in **Table X: Existing (2022) Traffic Noise Levels Without and With Project Scenario A and Table Y: Existing (2022) Traffic Noise Levels Without and With Project Scenario B**. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided in **Appendix G-2**.

As also shown in **Tables X and Y**, the Project-related traffic noise would increase by up to 0.5 dBA under both Scenarios A and B, as discussed in the Traffic Study. Scenario A assumes a cul-de-sac on Pennsylvania Avenue just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street. For Scenario B, Pennsylvania Avenue would extend from Karon Street to Tennessee Street, which would complete the connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. Noise level increases less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, traffic noise impacts from Project-related traffic on off-site sensitive receptors would be **less than significant**. No mitigation measures are required.

[42] FHWA 1977. *Highway Traffic Noise Prediction Model*, FHWA RD 77-108.

[43] Michael Baker International. 2023. *Traffic Study for the Neighborhoods at Lugonia Village*, *City of Redlands*. January 13.

Table X: Existing (2022) Traffic Noise Levels Without and With Project Scenario A

Roadway Segment	Without Project Conditions					With Project Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Conditions (dBA)
Tennessee Street between San Bernardino Avenue and Pennsylvania Avenue (Future)	6,190	< 50	< 50	134	63.8	6,510	< 50	< 50	140	64.0	0.2
Tennessee Street between Pennsylvania Avenue (Future) and Lugonia Avenue	6,190	< 50	< 50	134	63.8	6,710	< 50	< 50	145	64.1	0.3
Tennessee Street between Lugonia Avenue and I-10 Westbound On/Off Ramps	14,590	< 50	100	315	67.5	15,710	< 50	107	339	67.8	0.3
Pennsylvania Avenue between Karon Street and Texas Street	910	< 50	< 50	< 50	51.9	940	< 50	< 50	< 50	52.1	0.2
Pennsylvania Avenue east of Texas Street	2,620	< 50	< 50	< 50	56.5	2,620	< 50	< 50	< 50	56.5	0.0
Karon Street north of Pennsylvania Avenue	250	< 50	< 50	< 50	49.6	250	< 50	< 50	< 50	49.6	0.0
Karon Street between Pennsylvania Avenue and Lugonia Avenue	1,065	< 50	< 50	< 50	55.9	1,155	< 50	< 50	< 50	56.2	0.3
Texas Street north of Pennsylvania Avenue	5,300	< 50	< 50	116	62.1	5,440	< 50	< 50	119	62.2	0.1
Texas Street between Pennsylvania Avenue and Lugonia Avenue	6,175	< 50	< 50	135	62.8	6,285	< 50	< 50	137	62.9	0.1
Texas Street south of Lugonia Avenue	9,080	< 50	66	197	64.5	9,080	< 50	66	197	64.5	0.0
Lugonia Avenue between Tennessee Street and Project Driveway	17,270	< 50	120	372	67.2	19,170	< 50	133	413	67.7	0.5
Lugonia Avenue between Project Driveway and New York Street	17,860	< 50	124	385	67.4	19,480	< 50	135	419	67.8	0.4
Lugonia Avenue between New York Street and Texas Street	15,520	< 50	108	335	66.8	16,020	< 50	112	345	66.9	0.1
Lugonia Avenue east of Texas Street	14,130	< 50	99	305	66.4	14,410	< 50	101	311	66.5	0.1
New York Street south of Lugonia Avenue	4,280	< 50	< 50	93	61.8	4,410	< 50	< 50	96	61.9	0.1

Source: Compiled by LSA (2023).
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel
ft = foot/feet
I-10 = Interstate 10

Table Y: Existing (2022) Traffic Noise Levels Without and With Project Scenario B

Roadway Segment	Without Project Conditions					With Project Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Conditions (dBA)
Tennessee Street between San Bernardino Avenue and Pennsylvania Avenue (Future)	6,190	< 50	< 50	134	63.8	6,530	< 50	< 50	141	64.0	0.2
Tennessee Street between Pennsylvania Avenue (Future) and Lugonia Avenue	6,190	< 50	< 50	134	63.8	7,000	< 50	< 50	151	64.3	0.5
Tennessee Street between Lugonia Avenue and I-10 Westbound On/Off Ramps	14,590	< 50	100	315	67.5	15,720	< 50	107	339	67.8	0.3
Pennsylvania Avenue between Karon Street and Texas Street	910	< 50	< 50	< 50	51.9	980	< 50	< 50	< 50	52.3	0.4
Pennsylvania Avenue east of Texas Street	2,620	< 50	< 50	< 50	56.5	2,620	< 50	< 50	< 50	56.5	0.0
Karon Street north of Pennsylvania Avenue	250	< 50	< 50	< 50	49.6	250	< 50	< 50	< 50	49.6	0.0
Karon Street between Pennsylvania Avenue and Lugonia Avenue	1,065	< 50	< 50	< 50	55.9	835	< 50	< 50	< 50	54.8	-1.1[1]
Texas Street north of Pennsylvania Avenue	5,300	< 50	< 50	116	62.1	5,440	< 50	< 50	119	62.2	0.1
Texas Street between Pennsylvania Avenue and Lugonia Avenue	6,175	< 50	< 50	135	62.8	6,325	< 50	< 50	138	62.9	0.1
Texas Street south of Lugonia Avenue	9,080	< 50	66	197	64.5	9,080	< 50	66	197	64.5	0.0
Lugonia Avenue between Tennessee Street and Project Driveway	17,270	< 50	120	372	67.2	18,780	< 50	130	404	67.6	0.4
Lugonia Avenue between Project Driveway and New York Street	17,860	< 50	124	385	67.4	19,090	< 50	132	411	67.7	0.3
Lugonia Avenue between New York Street and Texas Street	15,520	< 50	108	335	66.8	15,630	< 50	109	337	66.8	0.0
Lugonia Avenue east of Texas Street	14,130	< 50	99	305	66.4	14,890	< 50	104	321	66.6	0.2
New York Street south of Lugonia Avenue	4,280	< 50	< 50	93	61.8	4,410	< 50	< 50	96	61.9	0.1

Source: Compiled by LSA (2023).

[1] Scenario B would connect the newly constructed Pennsylvania Avenue resulting in different local vehicle distribution patterns.

ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel
ft = foot/feet
I-10 = Interstate 10

Long-Term (Operational) Stationary Noise

The proposed Project includes on-site ground floor heating, ventilation, and air conditioning (HVAC) units for the single-family residences and rooftop HVAC units for the multifamily residences, which could potentially operate 24 hours per day. The specifications of typical HVAC equipment, including the reference noise level, are provided in **Appendix G-3**. Each HVAC unit would generate a noise level of 44.4 dBA L_{eq} at a distance of 50 feet. Based on the proposed Project's site plan and surrounding land uses, it is estimated that off-site single-family residences to the east would be exposed to up to four HVAC units from on-site single-family residences and up to 16 HVAC units from on-site multifamily residences, which would generate a noise level of 41.5 dBA L_{eq} and 43.1 dBA L_{eq}, respectively, at a distance of 50 feet. Also, it is estimated that off-site commercial uses to the south would be exposed to up to 28 HVAC units, which would generate a noise level of 50.3 dBA L_{eq} at a distance of 50 feet.

Table Z: HVAC Noise Levels shows the noise levels generated from HVAC units at the residential property line to the east and commercial property line to the south along with the distance from the HVAC equipment to the property line and distance attenuation. As shown in **Table Z**, noise levels generated from on-site HVAC units would reach up to 45.4 dBA L_{eq} at the closest residential property line to the east and 50.3 dBA L_{eq} at the closest commercial property line to the south. These noise levels would not exceed the City's daytime 30-minute (L_{50}) noise standards of 60 dBA and 65 dBA for residential and commercial uses, respectively. In addition, these noise levels would not exceed the City's nighttime 30-minute (L_{50}) noise standards of 50 dBA and 60 dBA for residential and commercial uses, respectively. Therefore, noise impacts from project operations would be **less than significant**. No mitigation measures are required.

Table Z: HVAC Noise Levels

Land Use	Direction	No. of Units	Reference Noise Level at 50 ft (dBA L_{eq})	Total Reference Noise Level at 50 ft (dBA L_{eq})	Distance (ft)	Distance Attenuation (dBA)	Noise Level[1] (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Residence	East	4	44.4	50.4	140	8.9	41.5	45.4
		16[2]	44.4	56.4	230	13.3	43.1	
Commercial	South	28[3]	44.4	58.9	135	8.6	50.3	50.3

Source: Compiled by LSA (2023).

[1] Noise levels generated from HVAC equipment would be lower when shielding factors are considered. Ground floor HVAC units for the proposed single-family residences would be shielded by the proposed residential buildings and rooftop HVAC units for the proposed multifamily residences would be shielded by a 4 ft high parapet.

[2] Total of 16 HVAC units for 16 multifamily residential dwelling units in Building 11.

[3] Total of 28 HVAC units for 28 multifamily residential dwelling units in Building 3.

dBA = A-weighted decibel
ft = foot/feet
HVAC = heating, ventilation, and air conditioning
L_{eq} = equivalent continuous sound level

Overall, the proposed Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project site in excess of standards established by the City of Redlands through its General Plan and Municipal Code. Noise impacts would be **less than significant,** and no mitigation measures are required.

b. Result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact

Discussion of Effects:

Short-Term Construction Vibration. This construction vibration impact analysis discusses the level of human annoyance using vibration levels in RMS (VdB) and assesses the potential for building damage using vibration levels in PPV (in/sec). Vibration levels calculated in RMS velocity are best for characterizing human response to building vibration, whereas vibration levels in PPV are best for characterizing damage potential.

Table AA: Vibration Source Amplitudes for Construction Equipment shows the reference vibration levels at a distance of 25 feet for each type of standard construction equipment from the FTA Manual[44]. Project construction is expected to require the use of large bulldozers and loaded trucks, which would generate ground-borne vibration levels of up to 0.089 in/sec (PPV) and 0.076 in/sec (PPV), respectively, when measured at 25 feet.

Table AA: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer[2]	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks[2]	**0.076**	**86**
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
[2] The equipment shown in **bold** text is expected to be used on site.

µin/sec = microinches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
L_V = vibration velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

The greatest vibration levels are anticipated to occur during the site preparation and grading phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts normally occur within the buildings.

[44] FTA. 2018. *Transit Noise and Vibration Impact Assessment Manual.*

The formula for vibration transmission is provided below:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Table AB: Potential Construction Vibration Annoyance lists the projected vibration levels from various construction equipment expected to be used on the Project site along with the distance from center of the Project site to the property line of the affected land use. As shown in **Table AB**, the residential and commercial property line to the east and south are approximately 460 feet and 710 feet from the center of the Project site and would experience vibration levels of up to 0.001 in/sec (RMS). These vibration levels would not result in community annoyance because they would not exceed the City's vibration annoyance threshold of 0.01 in/sec (RMS). Other building structures that surround the Project site would experience lower vibration levels because they are farther away.

Table AB: Potential Construction Vibration Annoyance

Land Use	Direction	Equipment/ Activity	Reference Vibration Level at 25 ft	Distance to Structure (ft)[1]	Vibration Level
			PPV (in/sec)		RMS (in/sec)[2]
Residential	East	Large bulldozers	0.089	460	0.001
		Loaded trucks	0.076	460	0.001
Commercial	South	Large bulldozers	0.089	710	0.000
		Loaded trucks	0.076	710	0.000

Source: Compiled by LSA (2023).
Note: The City's vibration perception threshold is 0.01 in/sec (RMS) at the property line of the Project site.
[1] Distance from the center of the project to the property line of the Project site.
[2] The RMS value is approximately 0.71 of the peak value (Caltrans 2020).
ft = foot/feet
in/sec = inches per second
RMS = root mean square

Similarly, **Table AC: Potential Construction Vibration Damage** lists the projected vibration levels from various construction equipment expected to be used on the project site at the project construction boundary to the nearest buildings in the project vicinity. As shown in **Table AC**, the closest residential and commercial buildings are approximately 70 feet to the east and 140 feet to the south, respectively, from the Project construction boundary and would experience vibration levels of up to 0.019 in/sec (PPV). This vibration level would not have the potential to result in building damage because the residential and commercial buildings would be constructed equivalent to non-engineered timber and masonry and vibration levels would not exceed the FTA vibration damage threshold of 0.20 in/sec (PPV). Other building structures that surround the Project site would experience lower vibration levels because they are farther away and would be constructed equivalent to non-engineered timber and masonry.

Table AC: Potential Construction Vibration Damage

Land Use	Direction	Equipment/ Activity	Reference Vibration Level at 25 ft	Distance to Structure (ft)[1]	Vibration Level
			PPV (in/sec)		PPV (in/sec)
Residential	East	Large bulldozers	0.089	70	0.019
		Loaded trucks	0.076	70	0.016
Commercial	South	Large bulldozers	0.089	140	0.007
		Loaded trucks	0.076	140	0.006

Source: Compiled by LSA (2023).
Note: The FTA-recommended building damage threshold is 0.20 PPV [in/sec]) at the receiving non-engineered timber and masonry building.
[1] Distance from the Project construction boundary to the building structure.
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity

Long-Term (Operational) Vibration. The Project would not generate vibration. In addition, vibration levels generated from Project-related traffic on roadways within the vicinity of the Project site (Tennessee Street, Lugonia Avenue, Texas Street, Pioneer Avenue, and San Bernardino Avenue) would be unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Therefore, vibration impacts from project-related operations would occur, and no vibration reduction measures are required.

Overall, ground-borne vibration or ground-borne noise generated from proposed Project would be **less than significant**. No mitigation measures are required.

c. For a project located within the vicinity of a private airstrip or airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?

No Impact

Discussion of Effect: The San Bernardino International Airport and Redlands Municipal Airport are 2.1 miles northwest and 2.4 miles northeast, respectively, of the Project site. The *Airport Layout Plan Narrative Report for San Bernardino International Airport*[45] shows that the Project site is outside of the San Bernardino International Airport's 65 dBA CNEL noise contour. The *Redlands Municipal Airport Land Use Compatibility Plan*[46] and the City's General Plan[47] show that the Project site is outside of the Redlands Municipal Airport's 60 dBA CNEL noise contour. Also, there are no private airstrips located within the vicinity of the Project site. Therefore, the proposed Project would not expose people residing or working in the vicinity of the Project site to excessive noise levels generated from nearby airport operations. There would be **no impact**.

[45] San Bernardino International Airport Authority (SBIAA). 2010. *Airport Layout Plan Narrative Report for San Bernardino International Airport*. November.
[46] Shutt Moen Associates. 2003. *Redlands Municipal Airport Land Use Compatibility Plan*. May 6.
[47] City of Redlands. 2017. *General Plan 2035*. December 5.

3.14 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less Than Significant Impact

Discussion of Effects: The Project site is currently undeveloped and does not contain any residential units. The proposed Project would construct 451 apartment units, 72 townhome units, and 18 single-family homes, for a total of 541 new units on the Project site. Based on a 2.77 persons per household estimate for the City of Redlands obtained from the United States Census Bureau, development of the 541 living units is estimated to result in a total population of 1,499 residents on the Project site (1,498.6 rounded to 1,499). [48] As of July 1, 2022, the population in the City was estimated at 73,288. Therefore, implementation of the Project is anticipated to increase the City's population by approximately 2 percent.[49]

On March 4, 2021, the Southern California Association of Governments (SCAG) released its final draft allocation of housing units for each jurisdiction in the region. For the current Regional Housing Needs Assessment (RHNA) cycle, SCAG provided the RHNA allocation number to the City of Redlands for the 2021-2029 housing element planning period consisting of the following household income levels: 967 very-low-income units, 615 low-income units, 652 moderate income units, and 1,282 above-moderate income units for a total allocation of 3,516 units.[50] Implementation of the proposed Project would result in the development of a total of 541 living units, including 27 very low income apartment units. The remaining apartment, townhome, and single-family residential units are expected to be sold at market rate (the above-moderate income level). The proposed Project would account for approximately 2.8

[48] United States Census Bureau, City of Redlands, QuickFacts, Persons per household, 2017-2021. Website: http://www.census.gov/quickfacts/reedlandscitycalifornia/ (accessed October 27, 2023). 2.77 persons per household * 541 units = 1,498.6.

[49] 1,441 residents / 73,288 total population = 0.0197 (rounded to 0.02)

[50] Southern California Association of Governments (SCAG), *SCAG 6th Cycle Final RHNA Allocation Plan*, March 4, 2021.

percent of the City's very-low-income unit RHNA allocation[51], 40.1 percent of the City's above-moderate income unit RHNA allocation[52] and approximately 15.4 percent of the total RHNA allocation for the City.[53]

The proposed Project also includes the construction of a public street extension. The extension of Pennsylvania Avenue along the northern boundary of the Project site would either end in a cul-de-sac or connect to the existing Pennsylvania Avenue and residential community to the east. Therefore, the proposed Project could induce indirect population growth in the area through the extension of this public road. However, use of the Pennsylvania Street extension is expected to be predominantly used by local traffic and residents of the Project site and surrounding residential neighborhoods. Addition, the proposed Project does not include construction of addition public infrastructure such as wastewater treatment facilities. As such, the indirect population growth induced would be minimal.

The increase in population at the Project site would be consistent with planned population growth and housing development in the City, as anticipated by the General Plan and regional planning documents, and the proposed public street is not expected to cause substantial indirect population growth. Since population generated by the proposed Project would incrementally increase the population of the City and not exceed local and regional population growth projections, population growth generated by the proposed Project would not be substantial. Impacts are **less than significant,** and no mitigation is required.

b. Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact

Discussion of Effects: As discussed above, the Project site is currently undeveloped and does not contain any residential units. Implementation of the Project would result in the development of a total of 541 living units on the Project site. As such, the proposed Project would not displace existing housing, but create more housing for residents of the City. **No impact** would occur, and no mitigation is required.

[51] 27 units / 967 very low income units = 0.0279
[52] 541 units/ 1,282 above moderate income units= 0.4009
[53] 541 units / 3,516 total RHNA = 0.1539.

3.15 PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Less Than Significant Impact

Discussion of Effects:

Fire Protection. Fire protection services within the City are provided by the Redlands Fire Department (RFD). Development of the proposed Project may incrementally increase the demand for fire protection services as it would increase the Project site's population by 1,499 residents. In its review of new development plans, the RFD evaluates project plans on its ability to provide proper fire protection to the development. Additionally, the proposed Project would be required to pay service and development fees to the RFD. Such fees would be used to fund capital costs associated with acquiring land for new fire stations, constructing new fire stations, purchasing fire equipment, and providing for additional staff as needed and as identified by the City. Any construction of future fire protection facilities would require project-level environmental review and site-specific mitigation as appropriate in order to ensure significant environmental impacts are avoided or mitigated.

The RFD aims to meet National Fire Protection Association standards of a four-minute response time for first responders 90 percent of the time, but as of 2015, RFD 90 percent response time was approximately nine minutes.[54] Therefore, the City is pursuing a more realistic objective of arriving within seven minutes 90 percent of the time, in accordance with the 2008 High-Level Fire Department Review for the RFD.

The RFD has determined that it would need to increase the number of fire stations in order to meet increased future citywide service demands. In the City's Strategic Plan for Fiscal Year 2022/2023 through 2027/2028, the construction of additional fire stations to maintain critical response times and provision of additional emergency response personnel were established as strategic objectives to enhance public

[54] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Page 3.13-18. City of Redlands. July 21, 2017.

health and safety within the City.[55] As such, the City has begun identifying locations for additional fire stations and developing a fire staffing plan.

The Project site is located adjacent to established residential neighborhoods in the City and in a Local Responsibility Area (LRA) Non-Very High Fire Hazard Severity Zone (Non-VHFHSZ).[56] The closest fire stations to the Project site are Redlands Fire Station 263, located at 10 West Pennsylvania Avenue, approximately 0.7 mile east of the Project site, and Redlands Fire Station 264, located at 1270 West Park Avenue, approximately 0.8 mile southwest of the Project site.[57] Average travel time between the Fire Station 263 and the Project site and Fire Station 264 and the Project site is approximately two and four minutes, respectively. Through compliance with California Vehicle Code 21806(A)(1), which requires all vehicles to yield to emergency vehicles, travel time between the fire stations and the Project site is expected to be reduced. Additionally, the City maintains mutual aid agreements with surrounding cities (i.e., Yucaipa and Loma Linda), as well as with the County of San Bernardino and the United States Forest Service, which allow for the services of nearby fire departments to assist the City during major emergencies.

Project design features incorporated into the structural design and layout of the residential units would keep service demand increases to a minimum. For example, the Project would be constructed in accordance with the current California Building Code (at the time of the writing the 2022 CBC), which requires all on-site structures to incorporate construction techniques and materials such as roofs, eaves, exterior walls, vents, appendages, windows, and doors resistant to and/or to perform at high levels against ignition during the exposure to fires. Fire sprinklers would be incorporated into each residential unit to further reduce fire risk and service demand. Access to the Project site would be from West Lugonia Avenue and the proposed West Pennsylvania Avenue extension, and the internal streets on the Project site would be developed to City and Fire Code Standards to allow emergency vehicles ease of access and maneuverability. Finally, fire hydrants would be placed within the Project site, at specific distances required by fire service and City requirements.

Based on the proposed Project site's location in a LRA Non-Very High Fire Hazard Severity Zone in proximity to existing RFD facilities capable of responding to emergencies at the Project site within the City's stated response time objective of seven minutes 90 percent of the time, the development of the proposed Project would not cause fire staffing, facilities, or equipment to operate at a deficient level of service. The Project itself would not require the construction of new or physically altered fire protection facilities, the construction of which could result in an environmental impact. Additionally, because the proposed Project would be required to pay Development Impact Fees (DIFs) to fund future fire facilities and services, which would be subject to project- and site-specific environmental review, impacts associated with the need to expand fire protection services and facilities in order to maintain acceptable levels of service would be **less than significant**. No mitigation is required.

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[55] City of Redlands. *City of Redlands Strategic Plan FY 22-23 through FY 27-28.* Website: https://www.cityofredlands.org/sites/main/files/file-attachments/redlandsstrategicplan_final.pdf?1651172526 (accessed October 27, 2023).

[56] CALFIRE, Fire Hazard Severity Zones Maps, City of Redlands Map. Website: https://osfm.fire.ca.gov/media/5949/redlands.pdf (accessed October 27, 2023).

[57] City of Redlands. *Fire Station Locations.* Available at: https://www.cityofredlands.org/pod/fire-station-locations-0. (accessed October 27, 2023).

Police Protection. Police protection services within the City are provided by the Redlands Police Department (RPD). Development of the proposed Project may incrementally increase the demand for police protection services due to the increased population of residents on the site. In its review of new development plans, the RPD evaluates project plans on its ability to provide proper police protection to the development. Additionally, the Applicant would be required to pay service and development fees to the RPD. Such fees would be used to fund capital costs associated with acquiring land for new police stations, constructing new police stations, purchasing crime-fighting equipment for new police stations, and providing for additional staff as needed and as identified by the City. Any construction of future police facilities would require project-level environmental review and site-specific mitigation as appropriate in order to ensure significant environmental impacts are avoided or mitigated.

The RPD does not base service standards on an industry standard; instead, the City aims for a response time of 4.5 minutes. The RPD has determined that it would need to increase the number of police stations in order to meet increased future citywide service demands. The Project site is located adjacent to established residential neighborhoods in the City, which are already served by the RPD. The closest police station to the Project site is Redlands Police Department located at 1270 West Park Avenue, approximately 0.8 mile southwest of the Project site. Average travel time between the nearest police station and the Project site is approximately five minutes. Through compliance with California Vehicle Code 21806(A)(1), which requires all vehicles to yield to emergency vehicles, travel time between the nearest police station and the Project site is expected to be reduced below 4.5 minutes. Additionally, the City maintains mutual aid agreements with surrounding cities (i.e., Yucaipa and Loma Linda), as well as with the County of San Bernardino, which allow for the services of nearby police and sheriff departments to assist the City during major emergencies.

The Project would incorporate Crime Prevention through Environmental Design (CPTED) features to keep service demand increases to a minimum. For example, the Project includes informal surveillance design such as architecture, landscaping, and lighting designed to minimize visual obstacles and eliminate places of concealment for potential assailants.

Based on the proposed Project's location in proximity to existing RPD facilities capable of responding to emergencies at the Project site within the City's stated response time objective of 4.5 minutes, development of the proposed Project would not cause law enforcement staffing, facilities, or equipment to operate at a deficient level of service. The Project itself would not require the construction of new or physically altered law enforcement protection facilities, the construction of which could result in an environmental impact. Additionally, because the proposed Project would be required to pay DIFs to fund future law enforcement facilities and services, which would be subject to project- and site-specific environmental review, impacts associated with the need to expand law enforcement protection services and facilities in order to maintain acceptable levels of service would be **less than significant**. No mitigation is required.

Schools. The Project site is located within the Redlands Unified School District (RUSD). RUSD currently has 16 elementary schools (serving kindergarten through fifth grade); four middle schools (servings grades sixth through eighth); and three high schools (serving grades ninth through twelfth). The three closest schools to the Project site are as follows:

- Lugonia Elementary School located at 202 East Pennsylvania Avenue approximately 0.7 mile east of the Project site;

- Clement Middle School located at 501 East Pennsylvania Avenue approximately 1 mile east of the Project site; and

- Citrus Valley High School located at 800 West Pioneer Avenue approximately 0.5 mile north of the Project site.

Based on the proximity of the above-mentioned schools to the Project site, students generated by the Project are anticipated to attend these three schools. **Table AD: Redlands Unified School District Enrollment and Capacity Data** shows the current enrollment and capacity of the Redlands School District, Lugonia Elementary School, Clement Middle School, and Citrus Valley High School.

Table AD: Redlands Unified School District Enrollment and Capacity Data

District/School	Enrollment Capacity	Optimum Enrollment	2021-2022 Enrollment	Excess Room
Redlands Unified School District	26,125	20,302	20,162	5,963
Lugonia Elementary School	773	696	556	217
Clement Middle School	1,264	1,406	1,059	205
Citrus Valley High School	2,940	2,646	2,215	725

Source: Enrollment Capacity and Optimum Enrollment were obtained from the City of Redlands, *Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan*, Chapter 3.13: Public Facilities and Services, Table 3.13-3: Redlands Unified School District Enrollment, pg. 3.13-10. 2021-2022 Enrollment Data obtained from the California Department of Education, Data Quest Website: https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdLevels.aspx?cds=3667843&agglevel=district&year=2021-22. Accessed October 27, 2023.

As of the 2021–2022 school year, the Redlands Unified School District has capacity for an additional 5,963 students; Lugonia Elementary School has a capacity for an additional 217 students; Clement Middle School has a capacity for an additional 205 students; and, Citrus Valley High School has a capacity for an additional 725 students.

The proposed Project would include the development of 451 apartment units, 72 townhome units, and 18 single-family residences, which would generate school-aged children that would be anticipated to attend Redlands Unified School District's Lugonia Elementary School, Clement Middle School, and Citrus Valley High School. The proposed Project would increase the population in the community and would consequently add students to the local school system. The RUSD has accounted for the generation of its student population through its facilities planning activities based on the City's buildout; as such, RUSD does not anticipate further growth in its boundary that would exceed planned development associated with the City's buildout. The Project itself would not require the construction of new or physically altered educational facilities, the construction of which could result in an environmental impact. Additionally, because the proposed Project would be required to pay DIFs to fund future educational services provided by RUSD, which would be subject to project- and site-specific environmental review, impacts associated with the need to expand educational services and facilities in order to maintain acceptable levels of service would be **less than significant**. No mitigation is required.

Parks/Recreational Facilities. The City of Redlands has 21 parks totaling approximately 424.2 acres of land. The closest park to the Project site is Texonia Park, located at the intersection of Texas Street and Lugonia Avenue approximately 0.13 mile east of the Project site. Texonia Park is a 10.7-acre neighborhood

park and features a lighted soccer field, basketball courts, picnic, and playground facilities. [58] The City General Plan establishes a park standard of 5.0 acres of parkland for every 1,000 residents. As of 2021, the City had an estimated population of 73,288[59] residents, pursuant to the City's park standard, would require 366.44 acres of parkland within the City.[60] Under current conditions, the City of Redlands has a surplus of 57.76 acres of parkland, per the City's parkland standard.

The proposed Project is estimated to add 1,499 residents to the site and to the City's population. Based on the park standard of 5.0 acre of parkland for every 1,000 residents, the proposed Project would need to develop approximately 7.5 acres of parkland.[61] The proposed Project would provide a total of 201,550 square feet (sf) of private open space in the apartment complex neighborhood; a total of 32,029 sf of private open space in the townhome neighborhood; and each single family lot would include private front and back yards. However, the common open space areas would be for use by residents only and would not be open to the public. The proposed Project would also provide a private open space parklet in the northeastern corner of the Project site, which would be used by residents of the proposed single-family neighborhood.

In addition, the proposed Project on-site recreational amenities including a central green belt which includes 40 to 60-foot wide east/west garden and turf lawn, an enclosed dog park, tot lot, and a pool area. As such, it is anticipated that impacts to surrounding parks and recreational facilities would be further reduced as residents of the Projects site are expected to use on-site amenities. Nevertheless, some residents and/or their visitors may use other public recreational facilities. As a result, the Project would create an incremental increase in the use of area parks. The proposed Project would be required to adhere to Chapter 3.32.000, Open Space and Park Fees, of the City's Municipal Code which requires the payment of an Open Space and Park Development Impact Fee for residential development. With payment of these in-lieu fees, as required by **Standard Condition PS-1**, below, impacts to parks with implementation of the proposed Project would be **less than significant** and no mitigation is required.

Standard Condition PS-1 **Payment of Open Space and Park Development Impact Fee.** Prior to the issuance of building permits, the Director of the City of Redlands Department of Development Services, or designee, shall confirm that the Project Applicant has paid all required park in-lieu/park impact fees as established in Chapter 3.32.000 of the City of Redland's Municipal Code.

Other Public Facilities. The proposed Project is estimated to generate approximately 1,499 additional residents, which would be added to the City of Redlands population. This increase in population would incrementally increase the need for a number of public services including those listed above and others such as libraries and City administrative facilities. The proposed Project would be required to adhere to Chapter 3.60.000, Public Facilities Fees, of the City's Municipal Code which requires the payment of Public Facilities Fees for residential development. With payment of these in-lieu fees, as required by **Standard**

[58] City of Redlands. *Texonia Park.* Available at: https://www.cityofredlands.org/post/texonia-park. (accessed October 27, 2023).

[59] United States Census Bureau, Redlands City, California, QuickFacts, Estimated population, 2021. Website: http://www.census.gov/quickfacts/fact/table/redlandscitycalifornia,US/PST045222,PST045221 (accessed October 27, 2023).

[60] 73,288 / 1,000 = 73.288 * 5 = 366.44.

[61] 1,499 / 1,000 = 1.499 * 5 = 7.495.

Condition PS-2, below, impacts to other public facilities with implementation of the proposed Project would be **less than significant** and no mitigation is required.

Standard Condition PS-2 **Payment of Public Facilities Development Impact Fee.** Prior to the issuance of building permits, the Director of the City of Redlands Department of Development Services, or designee, shall confirm that the Applicant has paid all required public services in-lieu/public services impact fees as established in Chapter 3.60.000 of the City of Redland's Municipal Code.

3.16 RECREATION

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less Than Significant Impact

Discussion of Effects: The proposed Project includes the construction of 451 apartment units, 72 townhome units, and 18 single-family residences on the Project site. As discussed in Section 3.14, Population and Housing, the proposed Project is estimated to add 1,499 residents to the Project site and to the City's population, which would incrementally increase the public use of surrounding parks, such as Texonia Park. However, this increase is not anticipated to be such that substantial physical deterioration of the facility would occur. It is anticipated that development of the on-site recreational amenities including an internal greenbelt area in the apartment complex that includes a 40-foot to 60-foot-wide linear east/west garden, a seating area framed by a central turf oval and trees , an enclosed dog park, tot lot, and a pool area would minimize the use of nearby parks as residents of the Project would more than likely use the on-site recreational amenities. Further, the proposed Project would provide a private open space parklet at the northeastern corner of the Project site, which would be used by residents of the proposed single-family neighborhood.

The proposed Project would also be required to adhere to Chapter 3.32.000, Open Space and Park Fees, of the City's Municipal Code which requires the payment of an Open Space and Park Development Impact Fee for residential development (**Standard Condition PS-1**). Twenty-five percent of this fee would be deposited into the City's Open Space Fund to be used solely for the purposed of acquisition, improvement, preservation, and expansion of open space areas within the City.[62] As such, impacts associated with the deterioration of surrounding recreational facilities would be **less than significant**, and no mitigation is required.

[62] City of Redlands. *Annual Report of Development Impact Fees.* December 21, 2021.

b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Less Than Significant Impact

Discussion of Effects: As discussed above, the proposed Project would include private, on-site amenities such as an internal greenbelt area in the apartment complex that includes a 40-foot to 60-foot-wide linear east/west garden, a seating area framed by a central turf oval and trees, an enclosed dog park, tot lot, and a pool area. In addition, the Project would provide a public open space parklet located between the intersection of Karon Street and current Pennsylvania Avenue and the cul-de-sac terminus of the proposed Pennsylvania Avenue extension. The construction of these recreational facilities is part of the proposed Project, and any potential and adverse effects associated with implementation of the proposed Project's recreational facilities have been considered throughout the analysis of this IS/MND. As discussed elsewhere in this document, all of the proposed Project's significant impacts can be mitigated to **less than significant** levels. As discussed above under Threshold 3.16(a), the proposed Project would not cause or accelerate the substantial physical deterioration of existing recreational facilities, so it would not require the construction or expansion of off-site recreational facilities. No mitigation is required.

3.17 TRANSPORTATION

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☒	☐	☐
b. Conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d. Result in inadequate emergency access?	☐	☐	☒	☐

The information and analysis in this section is based on the *Traffic Study* prepared by Michael Baker International on January 13, 2023, *LOS Study Addendum* prepared by Michael Baker International on June 23, 2023, and the *VMT Assessment* prepared by Michael Baker International on January 23, 2023. These reports are provided in **Appendices H-1, H-2, and H-3** respectively.

a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less Than Significant Impact with Mitigation Incorporated

Discussion of Effects: The proposed Project would develop the Project site with 451 apartment units, 72 townhome units, and 18 single family units. Vehicular access to the Project site would be provided via two driveways from West Lugonia Avenue (a signalized intersection at New York Street/West Lugonia Avenue and a right-in/right-out driveway on the southwest corner of the Project site), two driveways from the proposed Pennsylvania Avenue extension, and Karon Street. Because the proposed Pennsylvania Avenue extension would either end in a cul-de-sac just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street (Scenario A) or would extend from Karon Street west to Tennessee Street, creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street (Scenario B), the *Traffic Study* analyzed Project-related traffic under the two scenarios.

The proposed Project is forecast to generate 3,728 daily vehicle trips to and from the Project site, including 228 trips during the a.m. peak hour and 288 trips during the p.m. peak hour. Because the proposed Project would generate more than 100 peak hour trips and would add more than 50 peak hour trips, the *Traffic Study* analyzed the proposed Project's impact on City intersections under both Scenario A and B.

Under existing conditions, all City intersections operate at overall acceptable LOS C or better during the a.m. peak hour. During the p.m. peak hour, all City intersections operate at overall LOS C or better except for Tennessee Street and West Lugonia Avenue (operating at an overall LOS D) and West Lugonia Avenue and Texas Street (operating at an overall LOS F). However, under both Scenario A and B, the City intersection at Texas Street and West Lugonia Avenue would operate at the same LOS as existing conditions. Although the proposed Project would contribute to the existing deficiency at Texas Street and West Lugonia Avenue (operating at an overall LOS D), no mitigation is necessary, as the proposed Project would not degrade operations below existing conditions.

At the intersection of Tennessee Street and West Lugonia Avenue, the proposed Project would degrade operations below existing conditions during the PM Peak Hour. Under existing conditions, the intersection operates at an overall LOS D during the PM peak hour. Under the Existing With Project scenario, operations at the intersection would be degraded to a LOS of E under both Scenarios A and B. This would represent a conflict with Guiding Policy 5.20c of the City's General Plan Connected City Element, which states that where the current level of service at a location within the City of Redlands is below the Level of Service (LOS) C standard, a development project shall not be approved until mitigated so that it does not reduce the existing level of service at that location. In order to mitigate the LOS degradation resulting from the proposed project, the *LOS Study Addendum* recommended the existing signal timing parameters be evaluated and the signal timing be optimized at the intersection of Tennessee Street and West Lugonia Avenue. With Applicant-funded signal timing modifications, as detailed in **Mitigation Measure (MM) TRA-1**, potentially significant impacts to the intersection of Tennessee Street and West Lugonia Avenue would be reduced to a less than significant level.

In addition, all Caltrans intersections operate at acceptable overall LOS D or better during both the a.m. peak hour and p.m. peak hour. As such, the *Traffic Study* identified no adverse effects at any of the study intersections with the addition of project related traffic under both Scenario A and B.

Based on the information provided in the *Traffic Study* and summarized above, the proposed Project would remain compliant with the City of Redlands's Measure "U" Principles of Managed Development, which states that the following must remain true with development of a project: (1) Levels of traffic service throughout the City shall be maintained; (2) collector and local street standards shall be maintained; (3) circulation patterns shall protect residential neighborhoods from increased traffic congestions; and (4) designated scenic highways within the City shall be maintained.

Because all of the Project study intersections would operate at acceptable LOS C or maintain the existing overall LOS, and the adverse Project effects at the intersection of Tennessee Street and West Lugonia Avenue are expected to be reduced to less than significant levels with the modification of signal timing (**MM TRA-1)**, the proposed Project would not impact the surrounding local and collector roadways, the proposed Project would distribute traffic directly to the collector roadways, and the proposed Project would not distribute traffic onto or impact the Scenic Highways within the City of Redlands, the proposed project is consistent with the City of Redlands's Measure "U" Principles of Managed Development. Additionally, pursuant to the requirements of the City of Redlands, Development Impact Fees (DIFs) will be required of the Project. The DIF is applied to pay a portion of the costs identified for public facilities, including transportation-related improvements.

Therefore, with implementation of **MM TRA-**1, the proposed Project would not conflict with a program, plan, ordinance or policy pertaining to transit, bicycle and pedestrian facilities. Final design plans would

be subject to review and approval by City staff prior to issuance of building permits, and adherence to applicable City requirements would ensure the proposed Project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system and impacts would be **less than significant with incorporation of mitigation**.

MM TRA-1 Prior to submission of building permits, the Applicant shall coordinate with the City's Engineering Division to determine the anticipated cost of evaluating and optimizing signal timing parameters at the intersection of Tennessee Street and West Lugonia Avenue. The Applicant shall submit payment to the Engineering Division covering the determined cost in full, consistent with County guidelines. The Building and Safety Division shall confirm the completion of payment prior to issuing building permits. Upon conclusion of Project construction, the Building and Safety Division shall not issue a Certificate of Occupancy to the Applicant until receiving confirmation from the City that signal optimization has been completed.

b. Conflict or be inconsistent with *CEQA Guidelines Section 15064.3, subdivision (b)*?

Less Than Significant Impact

Discussion of Effects: As part of the *CEQA Guidelines* 2019 updates, Section 15064.3 was added and codifies that project-related transportation impacts are typically best measured by evaluating the Project's vehicle miles traveled (VMT). Specifically, subdivision (b) focuses on specific criteria related to transportation analysis and is divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. Subdivision (b)(1) provides guidance on determining the significance of transportation impacts of land use projects using VMT; projects located within 0.5 mile of high-quality transit should be considered to have a less than significant impact. Subdivision (b)(2) addresses VMT associated with transportation projects and states that projects that reduce VMT, such as pedestrian, bicycle, and transit projects, should be presumed to have a less than significant impact. Subdivision (b)(3) acknowledges that Lead Agencies may not be able to quantitatively estimate VMT for every project type; in these cases, a qualitative analysis may be used. Subdivision (b)(4) stipulates that Lead Agencies have the discretion to formulate a methodology that would appropriately analyze a project's VMT. Therefore, the *City of Redlands CEQA Assessment VMT Analysis Guidelines*, adopted July 2020 (VMT guidelines) was used to determine the Project VMT impacts. The City's VMT Guidelines provide several screening criteria for projects within the City. Projects that cannot be screened out by the screening criteria should conduct further VMT analysis to identify Project-related VMT impacts. One of the screening criteria included in the VMT guidelines is for Low VMT Areas. The City's VMT Guidelines state the following:

> *Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary.*

Using the SBCTA VMT screening tool referenced in the City's VMT Guidelines, the *VMT Assessment* determined that the Project site is within a Low VMT Area. Therefore, based on the City's VMT Guidelines, the proposed Project would not result in any significant VMT impacts. Impacts would be **less than significant**, and no mitigation is required.

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact

Discussion of Effects: Vehicular access to the Project site would be provided via two driveways from West Lugonia Avenue (a signalized intersection at New York Street/West Lugonia Avenue and a right-in/right-out driveway on the southwest corner of the Project site), two driveways from the proposed Pennsylvania Avenue extension, and Karon Street. The proposed Pennsylvania Avenue extension would either end in a cul-de-sac just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street (Scenario A) or would extend from Karon Street west to Tennessee Street, creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street (Scenario B).

Roadway frontage improvements in and around the Project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, and intersection control, as well as incorporate design standards tailored specifically to site access requirements.

All final site plans would be subject to review and approval by the City's Municipal Utilities & Engineering Department prior to issuance of building permits, and adherence to applicable requirements would ensure the proposed development would not include any sharp curves, dangerous driveway intersections, or visual obstructions for drivers negotiating roadway curves. Therefore, impacts related to a substantial increase in hazards due to a design feature or incompatible use would be **less than significant**. No mitigation is required.

d. Result in inadequate emergency access?

Less Than Significant Impact

Discussion of Effects: The Applicant would be required to design, construct, and maintain structures, roadways, and facilities that would provide for adequate emergency access and evacuation. Construction activities, which may temporarily restrict vehicular traffic, would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures.

Vehicular access to the Project site would be provided via two driveways from West Lugonia Avenue (a signalized intersection at New York Street/West Lugonia Avenue and a right-in/right-out driveway on the southwest corner of the Project site), two driveways from the proposed Pennsylvania Avenue extension, and Karon Street. The proposed Pennsylvania Avenue extension would either end in a cul-de-sac just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street (Scenario A) or would extend from Karon Street west to Tennessee Street, creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street (Scenario B). Final site plans would be subject to review and approval by the City's Fire and Police Departments to ensure adequate emergency vehicle access to and within the Project site prior the issuance of building permits. Adherence to the emergency access measures required by the City would ensure impacts related to inadequate emergency access would be **less than significant**. No mitigation is required.

3.18 TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☒	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

a. Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

Less Than Significant Impact with Mitigation Incorporated

Discussion of Effect: Chapter 532, Statutes of 2014 (i.e., AB 52), requires Lead Agencies evaluate a project's potential to impact "tribal cultural resources." Such resources include "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources." AB 52 also gives Lead Agencies the discretion to determine, supported by substantial evidence, whether a resource qualifies as a "tribal cultural resource."

Per AB 52 (specifically PRC 21080.3.1), Native American consultation is required upon request by a California Native American tribe that has previously requested that the City provide it with notice of such projects. Pursuant to provisions of AB 52, the City contacted the following Native American Tribes.

- Gabrieleño Band of Mission Indians – Kizh Nation;
- Morongo Band of Mission Indians;
- Soboba Band of Luiseño Indians;

- Yuhaaviatam of San Manuel Nation (formerly San Manuel Band of Mission Indians); and
- Torres Martinez Desert Cahuilla Indians.

Chapter 905, Statutes of 2004 (i.e., SB 18), requires Lead Agencies to consult with California Native American tribes to aid in the potential of traditional tribal cultural places through local land use planning. Tribal consultation pursuant to SB 18 is required when a project proposes amendments or adoptions of a general plan or a specific plan, or the designation of open space. As the proposed Project would include a general plan amendment, zone change, and specific plan amendment the City contacted the following Native American Tribes pursuit to the provisions of SB 18.

- Agua Caliente Band of Cahuilla Indians;
- Augustine Band of Cahuilla Mission Indians;
- Cabazon Band of Mission Indians;
- Cahuilla Band of Indians;
- Los Coyotes Band of Cahuilla and Cupeno Indians;
- Morongo Band of Mission Indians;
- Quechan Tribe of the Fort Yuma Reservation;
- Ramona Band of Cahuilla;
- San Fernando Band of Mission Indians;
- Soboba Band of Luiseño Indians;
- Yuhaaviatam of San Manuel Nation (formerly San Manuel Band of Mission Indians);
- Santa Rosa Band of Cahuilla Indians;
- Serrano Nation of Mission Indians; and
- Torres Martinez Desert Cahuilla Indians.

The City received requests for consultation from Gabrieleño Band of Mission Indians – Kizh Nation and the Morongo Band of Mission Indians. On July 28, 2023, the Gabrieleño Band of Mission Indians – Kizh Nation withdrew its request for further consultation. Consultation with the Morongo Band of Mission Indians concluded upon agreement of required mitigation measures on August 23, 2023.

The Morongo Band of Mission Indians (Consulting Tribe[s]) expressed interest in the Project.[63] The Morongo Band of Mission Indians indicated that the Project site is potentially sensitive for tribal cultural resources, regardless of the presence or absence of remaining surface artifacts and features. As such, the tribe requested archaeological and native monitors observe construction related ground disturbing activities, which may expose previously unknown tribal cultural resources and provided mitigation measures to reduce potential impacts to less than significant levels. Given there is the potential for the proposed Project to inadvertently discover or unearth previously undocumented Native American tribal cultural resources during ground-disturbing activities, **Mitigation Measures TCR-1 through TCR-8** are proposed.

Mitigation Measure TCR-1 **Native American Treatment Agreement.** Prior to the issuance of grading permits, the Applicant shall enter into a Tribal Monitoring Agreement with the Consulting Tribe(s) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited

[63] Email dated November 21, 2022, from the City of Redlands to LSA.

to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification, evaluation, and potential recovery of cultural resources.

Mitigation Measure TCR-2 **Retention of Archaeologist**. Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist shall conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal Representative. The training session shall focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event.

Mitigation Measure TCR-3 **Cultural Resource Management Plan**. Prior to any ground-disturbing activities the Project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the Project site. This Plan shall be written in consultation with the Consulting Tribe(s) and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the Project schedule.

Mitigation Measure TCR-4 **Pre-Grade Meeting.** The retained qualified archeologist and Consulting Tribe(s) representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.

Mitigation Measure TCR-5 **On-site Monitoring**. During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in

consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

Mitigation Measure TCR-6 **Inadvertent Discovery of Cultural Resources**. In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground-disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and Consulting Tribe(s) of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the Consulting Tribe(s), and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference:

A. Full avoidance.

B. If avoidance is not feasible, Preservation in place.

C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction.

D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)

Mitigation Measure TCR-7 **Inadvertent Discovery of Human Remains**. The Consulting Tribe(s) requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. No photographs are to be taken except by the coroner, with written approval by the Consulting Tribe(s).

A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e.,

clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98.

B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5.

C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98

D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial shall not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations shall be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.

Mitigation Measure TCR-8 **Final Report**. The final report[s] created as a part of the Project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the City and Consulting Tribe(s) for review and comment. After approval of all parties, the final reports shall be submitted to the Eastern Information Center, and the Consulting Tribe(s).

With implementation of **Mitigation Measures TCR-1 through TCR-8,** impacts to tribal cultural resources would be **less than significant**

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less Than Significant Impact with Mitigation Incorporated

Discussion of Effect: As discussed above in Response 3.18(a), the Morongo Band of Mission Indians indicated that the Project site is potentially sensitive for tribal cultural resources regardless of the presence or absence of remaining surface artifacts and features. As such, there is the potential for the proposed Project to inadvertently discover or unearth previously undocumented Native American tribal cultural resources during ground-disturbing activities. With implementation of **Mitigation Measures TCR-1 through TCR-8**, impacts to tribal cultural resources would be **less than significant**.

3.19 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm drainage, electrical power, natural gas or telecommunication facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d. Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste.	☐	☐	☒	☐

The most recent version of CalEEMod (Version 2022.1) was used to estimate the Project's water demand and the amount of wastewater and solid waste that would be generated during operation of the proposed Project (**Appendix A-2**).

a. Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm drainage, electrical power, natural gas or telecommunication facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact

Discussion of Effects: Local governments and water districts are responsible for complying with federal regulations, both for wastewater plant operation and the collection systems (e.g., sanitary sewers) that convey wastewater to the wastewater treatment facility. Proper operation and maintenance are critical for sewage collection and treatment, as impacts from these processes can degrade water resources and

affect human health. For these reasons, publicly owned treatment works (POTWs) are subject to Waste Discharge Requirements (WDRs) to ensure that such wastewater facilities operate in compliance with water quality regulations set forth by the State. WDRs, issued by the State, establish effluent limits on the kinds and quantities of pollutants that POTWs can discharge. These permits also contain pollutant monitoring, recordkeeping, and reporting requirements. Each POTW that intends to discharge into the nation's waters must obtain a WDR prior to initiating its discharge.

All new development within the City is required to comply with all provisions of the NPDES program and the City's MS4, as enforced by the RWQCB. The proposed Project would result in typical wastewater discharges that would not require new methods or equipment for treatment that are not currently permitted for the Redlands Wastewater Treatment Facility, which would serve the proposed Project. Based on the CalEEMod results, the Project is estimated to produce 20,294,564 gallons of wastewater a year (55,601.5 gallons per day).[64] The City's wastewater treatment plant, Redlands Wastewater Treatment Facility, currently treats approximately 6 million gallons per day (mgd) and has the capacity to process up to 9.5 mgd.[65] The proposed Project would contribute approximately 0.9 percent[66] of the current wastewater treatment rate of the Redlands Wastewater Treatment Facility. The proposed Project would connect to existing wastewater infrastructure, which is currently operating within capacity. Sewer service to the Project site would be provided via lines that would connect to the existing 10-inch sewer line along West Lugonia Avenue and the existing 8-inch sewer line along Karon Street. Compliance with condition or permit requirements established by the City, WDRs outlined by the RWQCB, as well as requirements included in the NPDES permit, SWPPP, WQMP, and wastewater conveyance standards would ensure that wastewater discharges coming from the Project site and treated by the wastewater treatment facility system would not exceed applicable existing capacities. As such, implementation of the proposed Project would not require or result in the relocation or construction of new or expanded wastewater treatment infrastructure.

The City operates two surface water treatment plants and uses 15 wells, 37 booster pumps, 18 reservoirs, and 400 miles of transmission and distribution lines to provide water to its customers. Of this infrastructure, one booster station is used for non-potable water. The capacity of the City's 18 reservoirs is a total of 54.45 million gallons. The City's water treatment plants include the Henry Tate Water Treatment Plant and the Horace Hinckley Surface Water Treatment Plant. The Henry Tate Water Treatment Plant is a conventional water treatment plant built in 1967. The design capacity of the Tate plant is 20 million gallons per day (mgd). The City added enhancements to the Tate WTP to provide more water supply reliability by allowing State Water Project water to be mixed with Mill Creek water for treatment. The Horace Hinckley Surface Water Treatment Plant started operation in 1987 and has a permitted capacity of 14.5 mgd. The 10-year average flow (up to and including 2016) is 6,363 af at the Henry Tate Plant, and 6,697 af at the Horace Hinckley Plant.[67]

The vast majority of potable water demand originated from single-family residential uses (47 percent of the total), with the next-highest demand coming from multi-family residential uses (12 percent of the

[64] In the absence of an official wastewater generation rate, wastewater can be reasonably assumed to be 90 percent of water use. 22,549,516 of gallons per year * .9 = 20,294,564.4. 20,294,564.4 gpy = 55,601.5 gpd

[65] City of Redlands. Waste Water Treatment. Website. https://www.cityofredlands.org/post/wastewater-treatment (accessed October 27, 2023).

[66] 55,501.5 gal per day / 6 mgd = .00925.

[67] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Page 3.13-18. City of Redlands. July 21, 2017.

total). In 2015, single-family and multi-family residential water usage totaled 14,506 afy. Domestic water service to the Project site would be provided via existing lines beneath Karon Street and West Lugonia Avenue. The proposed Pennsylvania Avenue extension along the northern Project site boundary would include pipeline connections that would tie into the existing water line in Karon Street. Based on the CalEEMod results, the Project's estimated water usage would be 26,687,668 gpy (81.96 afy.[68] The proposed Project would contribute approximately 0.6 percent of the total single-family and multi-family residential water usage for the City based on the 2015 water usage data. As such implementation of the proposed Project would not require or result in the relocation or construction of new or expanded water supply infrastructure.

The Project site, in its existing undeveloped condition, is covered entirely by pervious surfaces and is generally flat. Because there are no storm drain connections available on the Project site, the overall drainage concept of the proposed Project is to reduce storm flows from the Project site through underground detention systems which would ultimately discharge the reduced flows onto the surrounding public streets. Storm flows from the underground detention/infiltration systems would discharge through sidewalk culverts on Lugonia Avenue and the proposed Pennsylvania Avenue extension. The underground detention chamber for storm flows draining north would have a total storage volume of 4,610 cubic feet (cf), and the underground detention chamber for southern drainage would have a total storage volume of 11,530 cf. As discussed in Section 3.10, Hydrology and Water Quality, the implementation of the proposed drainage system would comply with all applicable regulatory compliance measures and would not result in significant environmental effects from the construction of new or expanded storm drainage facilities.

Section 3.6, Energy, of this IS/MND discusses the Project's energy requirements (i.e., electricity, fuel consumption, and natural gas consumption). The proposed Project would consume nominal amounts of electricity and natural gas when compared to what is currently being generated and being consumed within the City of Redlands and within the region. The energy suppliers would have enough electricity and natural gas to adequately serve the proposed Project once it is developed and operational. According to the Project site plans, no existing electrical/natural gas infrastructure would need to be moved on site, and the proposed Project would connect into the existing utilities. Electrical service would be provided by SCE through connections to the existing overhead lines along Karon Street and West Lugonia Avenue. Two power poles on Lugonia Avenue, one power pole at the corner of Lugonia Avenue and Karon Street, and two power poles on Karon Street would be removed or relocated as part of the proposed Project. All other existing power poles in the vicinity of the Project site would be protected in place. Natural gas service would be provided by Southern California Gas Company (SoCalGas) through connections to the existing 2-inch line beneath West Lugonia Avenue. As such, implementation of the proposed Project would not require or result in the relocation or construction of new or expanded electricity or natural gas supply infrastructure, and there would be **no impact.**

Overall, impacts would be **less than significant,** and no mitigation measures are warranted.

[68] 1 US gal/yr = .0000031 afy

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact

Discussion of Effects: Water services are provided to the City and the Project site by the City's Municipal Utilities Department, which is party to the Upper Santa Ana River Watershed Integrated Regional Water Management Plan, which indicates the region is highly dependent on local water supplies. In particular, precipitation stored as groundwater provides approximately 67 percent of supplies during average years and over 70 percent of supplies during drought years.[69] Based on the CalEEMod results, the Project's estimated water usage would be 81.96 afy.

According to the City's General Plan EIR, during normal year water supply, the City would have a surplus of 28,383 acre feet in the year 2035.[70] During multiple dry years, the City would have a surplus of between 23,118 acre feet (third year) and 32,556 acre feet (first year) in the year 2035. Based on the Project's anticipated water demand of 81.96 afy, the proposed Project would demand up to 0.4 percent of the City's surplus water in 2035 during the third year of a worst-case multiple dry year scenario.[71] Since the City has sufficient water supplies to meet current and future development consistent with its General Plan through the year 2035, additional water storage and treatment facilities are not anticipated to be required through build out of the General Plan in 2035.[72] Impacts would be **less than significant,** and no mitigation is required.

c. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact

Discussion of Effects: Please refer to the discussion under Response 3.19(a) above. Based on modeled flows, the proposed Project would contribute approximately 0.01 percent of the current wastewater treatment rates of the Redlands Wastewater Treatment Facility. The Redlands Wastewater Treatment Facility would have adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments, and impacts would be **less than significant.**

d. Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact

Discussion of Effects: Solid waste in the City of Redlands is primarily disposed of at the California Street Landfill, which is operated by the City's Facilities and Community Services Department and the San

[69] *Upper Santa Ana River Watershed Integrated Regional Water Management Plan.* Page ES-2. City of Redlands Municipal Utilities and Engineering Department, January 2015.

[70] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Page 3.14-20. City of Redlands. July 21, 2017.

[71] 69.95 afy of project demand ÷ 23,118 afy water surplus in 2035 during the third year of a worst-case multiple dry year scenario = 0.246 percent of the City's surplus water.

[72] *City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report, Revised Draft, SCH #2016081041.* Pages 3.14-20, 3.14-27, and 3.14-28. City of Redlands. July 21, 2017.

Timoteo Sanitary Landfill operated by San Bernardino County. The California Street Landfill, located at 2151 Nevada Street in Redlands, accepts a maximum of 829 tons of solid waste per day, and as of July 25, 2018, has a remaining capacity of 5,168,162 cubic yards. The maximum permitted capacity is 11,400,000 cubic yards and it is anticipated to reach full capacity by 2042. This landfill currently accepts the following types of solid waste: construction/demolition debris, mixed municipal, other designated, and sludge (biosolids).[73] The San Timoteo Sanitary Landfill, located at San Timoteo Canyon Road in Redlands, accepts a maximum of 2,000 tons of solid waste per day, and as of April 30, 2019, has a remaining capacity of 12,360,396 cubic yards. The San Timoteo Sanitary Landfill's maximum permitted capacity is 22,685,785 cubic yards and it is anticipated to reach full capacity by 2039.[74]

The Project site is currently undeveloped and under existing conditions, produces no solid waste. Implementation of the proposed Project would increase the Project site's population by 1,441 residents. Based on the CalEEMod results for the proposed Project, the proposed Project would generate an estimated 101.08 tons of solid waste per year (0.3 tons per day). The 0.3 tons per day of solid waste generated by the proposed Project would be 0.04[75] percent of the maximum solid waste accepted per day by the California Street Landfill and 0.02[76] percent of the maximum solid waste accepter per day at the San Timoteo Sanitary Landfill. Overall, the proposed Project solid waste generation contribution to these landfills would be nominal and would not exceed the daily permitted capacities of these facilities. Impacts would be **less than significant,** and no mitigation measures are warranted.

e. Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact

Discussion of Effects: All land uses within the City that generate waste are required to coordinate with a waste hauler to collect solid waste on a common schedule as established in applicable local, regional, and State programs. Additionally, all development within the City, including the proposed Project, is required to comply with applicable elements of AB 1327, Chapter 18 (California Solid Waste Reuse and Recycling Access Act of 1991), AB 939 (CalRecycle), and other local, State, and federal solid waste disposal standards.

The proposed Project would be required to comply with applicable provisions of AB 1327, AB 939, and AB 341 related to solid waste as a matter of policy. Impacts would be **less than significant,** and no mitigation measures are warranted.

[73] CalRecycle. 2022. Solid Waste Information System (SWIS) Facility Detail, California Street Landfill (36-AA-0017). Website: https://www2.calrecycle.ca.gov/SolidWaste/Site/Details/2637 (accessed October 27, 2023).

[74] Ibid.

[75] 0.3 tons per day / 829 tons per day = 0.00036188.

[76] 0.3 tons per day / 2,000 tons per day = 0.00015

3.20 WILDFIRE

If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact

Discussion of Effect: Please refer to Response 3.9(f) of this IS/MND for a discussion on impacts pertaining to the Project's potential to substantially impair an adopted emergency response plan or emergency evacuation plan. **Less than significant impacts** would occur, and no mitigation is required.

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less Than Significant Impact

Discussion of Effect: The Project site is within a LRA Non-Very High Fire Hazard Severity Zone according to CALFIRE mapping.[77] The General Plan EIR, Figure 3.7-3, indicates that the Project site is located in an area designated as a Moderate Fire Level Threat.[78] No hillside areas or natural areas prone to wildfires are

[77] CAL FIRE. Fire Hazard Severity Zones Maps, City of Redlands Map. Website: https://osfm.fire.ca.gov/media/5949/redlands.pdf (accessed October 27, 2023).

[78] City of Redlands, Revised Draft Environmental Impact Report for the Redlands General Plan Update and Climate Action Plan, Chapter 3.7: Hazards and Hazardous Materials, Figure 3.7-3: Fire Hazards and Fire Safety Services.

located in the immediate vicinity of the Project site as this area of Redlands is urbanized with residential neighborhoods and commercial areas. Winds may push wildfire smoke into the area of the proposed Project; however, these conditions would be temporary and if conditions warranted, the local air quality control district would warn residents of potential impacts due to wildfire smoke. The proposed Project would be required to implement and abide to Redlands General Plan policies (specifically Policies 7-A.83 through 7-A.106) that promote fire safety through agency cooperation and management of risk factors; adhere to applicable building and fire codes; and implement existing programs such as weed abatement and education under the Redlands Fire Department; all of which would reduce the wildfire risk at the Project site. Due to the nature of the Project site and surrounding areas, on-site and adjacent areas have minimal capability to support a wildfire. Impacts related to this issue would be **less than significant**; therefore, no mitigation is warranted.

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may result in temporary or ongoing impacts to the environment?

No Impact

Discussion of Effect: The Project site is located an urbanized area served by existing water and roadway infrastructure and does not require the installation or maintenance of wildland protection features such as fire roads, fuel breaks, or emergency water sources. In the absence of any need for such features, **no impact** (temporary or ongoing) would result from development of the proposed uses. No mitigation is required.

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact

Discussion of Effect: Similar to adjacent properties, the Project site is flat. No hillside areas or natural areas prone to wildfire fire are located in the immediate Project vicinity. Although the Project site is adjacent to fallow agriculture fields, this area is not prone to wildfires. As the Project would not expose persons or structures to post-fire slope instability or post-fire drainage, **no impact** would occur. In the absence of any impact, no mitigation is required.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

Does the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c. Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact with Mitigation Incorporated.

Discussion of Effects: The proposed Project's impacts to biological resources and cultural resources were analyzed in this IS/MND, and all direct, indirect, and cumulative impacts were determined to have **no impact**, a **less than significant impact**, or reduced to a **less than significant impact with mitigation incorporated**.

As discussed in Section 3.4, Biological Resources, no special-status plant species or special-status vegetation communities were observed within the Project site during the field survey. One special-status wildlife species, the Loggerhead shrike (*Lanius ludovicianus*; a State SSC), was observed during the field survey. However, due to a lack of nesting habitat and this species' status as a breeding bird along the Southern California coastal slope, the bird that was observed was more likely a transient or lingering

wintering bird that hadn't yet made it back to its breeding territory. In addition, the implementation of the proposed Project would not cause fish or wildlife populations to drop below self-sustaining levels or restrict the movement/distribution of rare or endangered species. With implementation of **Mitigation Measure BIO-1**, potential impacts to any threatened or endangered species would be reduced to a **less than significant** level. In addition, potential impacts to migratory and nesting birds would be reduced to a **less than significant** level with implementation of **Mitigation Measure BIO-2.**

As discussed in Section 3.5, Cultural Resources, development of the proposed Project would not affect known historic archaeological or paleontological resources. There are no known unique ethnic or cultural values associated with the Project site, nor are known religious or sacred uses associated with the Project site. Implementation of **Mitigation Measures CUL-1** and **CUL-2** would reduce impacts to known, unknown, or potential cultural resources that may be located within the Project site to **less than significant** levels. Furthermore, as discussed in Section 3.18, Tribal Cultural Resources, the Morongo Band of Mission Indians indicated that the Project site is potentially sensitive for tribal cultural resources regardless of the presence or absence of remaining surface artifacts and features. As such, the tribe requested that archaeological and native monitors observe construction related ground disturbing activities which may expose previously unknown tribal cultural resources and provided mitigation measures to reduce potential impacts to less than significant levels. Implementation of **Mitigation Measures TCR-1** through **TCR-8** would reduce impacts to previously unknown tribal cultural resources that may be located within the Project site to **less than significant** levels. Additionally, the Applicant is required to comply with California Code of Regulations (CCR) Section 15064.5(e), California Health and Safety Code Section 7050.5, and Public Resources Code (PRC) Section 5097.98 as a matter of policy in the event human remains are encountered at any time. To ensure an exclusionary buffer of 100 feet around any encounter with human remains, **Regulatory Compliance Measure CUL-1** is required. Adherence to **Mitigation Measures CUL-1, CUL-2, TCR-1 through TCR-8**, and **Regulatory Compliance Measure CUL-1**, as well as regulations governing human remains, would reduce potential impacts to cultural and paleontological resources to **less than significant with mitigation incorporated**.

With the aforementioned mitigation measures and regulatory compliance measures, impacts to biological resources and cultural resources would be **less than significant with mitigation incorporated**.

b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Less Than Significant Impact

Discussion of Effects: The proposed Project has either **no impact**, a **less than significant impact**, or a **less than significant impact with mitigation incorporated** with respect to all environmental issues pursuant to CEQA. Due to the limited scope of direct physical impacts to the environment associated with the proposed Project, the Project's impacts are primarily project specific in nature.

The cumulative effects resulting from build out of the City's General Plan were previously identified in the General Plan EIR. The type, scale, and location of the proposed Project is consistent with the General Plan. Because of this consistency, the potential cumulative impacts of the proposed Project would fall within the impacts identified in the City's General Plan EIR. The Applicant is required to pay "fair share"

development impact fees associated with the proposed Project. The proposed Project would have a **less than cumulatively considerable impact**.

c. Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant with Mitigation Incorporated

Discussion of Effects: Based on the analysis provided throughout this IS/MND, with incorporation of mitigation measures and regulatory compliance measures, the proposed Project would not result in any environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Potential impacts on human beings would be **less than significant with mitigation incorporated.**

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4.0 MITIGATION MONITORING AND REPORTING PROGRAM

4.1 MITIGATION MONITORING REQUIREMENTS

Public Resources Code (PRC) Section 21081.6 (enacted by the passage of Assembly Bill 3180) mandates that where significant effects have been identified, the following requirements shall apply to all reporting or mitigation monitoring programs:

- The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes that have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.

- The lead agency shall specify the location and custodian of the documents or other materials that constitute the record of proceedings upon which its decision is based.

- A public agency shall provide measures to mitigate or avoid significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents that address required mitigation measures or, in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.

- Prior to the close of the public review period for a Draft Mitigated Negative Declaration (MND), a responsible agency, or a public agency having jurisdiction over natural resources affected by the project, shall either (1) submit to the lead agency complete and detailed performance objectives for mitigation measures that would address the significant effects on the environment identified by the responsible agency or agency having jurisdiction over natural resources affected by the project, or (2) refer the lead agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a lead agency by a responsible agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures that mitigate impacts to resources that are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or noncompliance with that requirement by a responsible agency or agency having jurisdiction over natural resources affected by a project shall not limit the authority of the responsible agency or agency having jurisdiction over natural resources affected by a project, or the authority of the lead agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

4.2 MITIGATION MONITORING PROCEDURES

The mitigation monitoring and reporting program has been prepared in compliance with PRC Section 21081.6. It describes the requirements and procedures to be followed by the City of Redlands (City) to ensure that all mitigation measures adopted as part of the proposed Neighborhoods at Lugonia Village Project (Project) will be carried out as described in the Final IS/MND.

Table 4.A lists each of the mitigation measures (MM) and regulatory compliance measures (RCM) specified in the Draft IS/MND and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 4.A: Mitigation and Monitoring Reporting Program

Draft IS/MND Mitigation Measure or Regulatory Compliance Measures		Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
3.1: Aesthetics				
The proposed project would not result in any significant adverse impacts related to aesthetics. No mitigation is required.				
3.2: Agricultural and Forestry Resources				
The proposed project would not result in any significant adverse impacts related to agriculture and forestry resources. No mitigation is required.				
3.3: Air Quality				
The proposed project would not result in any significant adverse impacts related to air quality. No mitigation is required.				
3.4: Biological Resources				
MM BIO-1	A pre-construction burrowing owl clearance survey shall be conducted no less than 14 days prior to any vegetation removal or ground-disturbing activities to avoid impacts to burrowing owls and/or occupied burrows. The pre-construction clearance survey shall be conducted by a qualified biologist and in accordance with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). A second clearance survey shall be conducted within 24 hours prior to ground disturbance. Documentation of surveys and findings shall be submitted to the City of Redlands for review and file. If no burrowing owls or occupied burrows are detected, Project activities may begin, and no additional avoidance and minimization measures shall be required. If an occupied burrow is found outside, but within 500 feet, of the development footprint, the qualified biologist shall establish a "no-disturbance" buffer around the burrow location(s). The size of the "no-disturbance" buffer shall be determined in consultation with the California Department of Fish and Wildlife (CDFW) and be based on the species status (i.e., breeding, non-breeding) and proposed level of disturbance. If an occupied burrow is found within the development footprint and cannot be avoided, a burrowing owl exclusion and mitigation plan shall be prepared and submitted to CDFW for approval prior to initiating Project activities.	Qualified Biologist / Director of the City of Redlands Department of Development Services, or designee	No less than 14 days prior to any vegetation removal or ground-disturbing construction activities. A second clearance survey shall be conducted within 24 hours prior to ground disturbance.	☐
MM BIO-2	Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey shall be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season. Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered "take" and is potentially punishable by fines and/or imprisonment.	Qualified Biologist / Director of the City of Redlands Department of Development Services, or designee	No more than 3 days prior to any vegetation removal or ground disturbing activities.	☐

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
	If Project-related activities are to be initiated during the nesting season (January 1 to August 31), a pre-construction nesting bird clearance survey shall be conducted by a qualified biologist no more than three (3) days prior to the start of any vegetation removal or ground disturbing activities. The qualified biologist shall survey all suitable nesting habitat within the Project impact area, and areas within a biologically defensible buffer zone surrounding the Project impact area. If no active bird nests are detected during the clearance survey, Project activities may begin, and no additional avoidance and minimization measures shall be required. If an active bird nest is found, the species shall be identified, and a "no-disturbance" buffer shall be established around the active nest. The size of the "no-disturbance" buffer shall be increased or decreased based on the judgement of the qualified biologist and level of activity and sensitivity of the species. The qualified biologist shall periodically monitor any active bird nests to determine if Project-related activities occurring outside the "no-disturbance" buffer disturb the birds and if the buffer should be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, Project activities within the "no-disturbance" buffer may occur following an additional survey by the qualified biologist to search for any new bird nests in the restricted area.			
3.5: Cultural Resources				
MM CUL-1	Prior to the issuance of a grading permit, the Applicant shall provide the Director of the City of Redlands Department of Development Services, or designee, with evidence that it has retained the services of a qualified archaeologist that meets the Secretary of the Interior standards on an on-call basis. Archaeological monitoring shall occur during all excavation activities down to a depth of 3 feet within 100 feet of the former residence location. In the event that cultural resources are discovered during Project activities, all work in the immediate vicinity of the find (within a 100-foot buffer) shall cease and the project archaeologist shall assess the find and determine appropriate treatment. Work on the other portions of the Project outside of the buffered area may continue during this assessment period.	Qualified Archaeologist / Director of the City of Redlands Department of Development Services, or designee	Prior to the issuance of a grading permit.	☐
MM CUL-2	If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the qualified archaeologist shall develop a Monitoring and Treatment Plan for the remainder of the Project site. The Monitoring and Treatment Plan shall be developed in coordination with the Applicant and the City. The Applicant shall secure a monitoring agreement with the archaeologist prior to the recommencement of work, and the archaeologist shall monitor during the remainder of the ground disturbance activities on the Project site and implement the Plan accordingly.	Qualified Archaeologist / Director of the City of Redlands Department of Development Services, or designee	Prior to the recommencement of work, and for the remainder of the ground disturbing activities.	☐

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
RCM CUL-1	In the event that human remains or funerary objects are encountered on the Project site during any construction activities associated with the Project, work within 100 feet of the discovery shall be redirected and the County Coroner notified immediately consistent with the requirements of California Code of Regulations (CCR) Section 15064.5(e). State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. If the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which shall determine and notify a Most Likely Descendant (MLD). With the permission of the property owner, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Consistent with CCR Section 15064.5(d), if the remains are determined to be Native American and an MLD is notified, the Applicant shall consult with the MLD as identified by the NAHC to develop an agreement for treatment and disposition of the remains. Prior to the issuance of grading permits, the Director of the City of Redlands Department of Development Services, or designee, shall verify that all grading plans specify the requirements of CCR Section 15064.5(e), State Health and Safety Code Section 7050.5, and PRC Section 5097.98, as stated above.	Construction Contractor and County Coroner / Director of the City of Redlands Department of Development Services, or designee	During construction activities.	☐
3.6: Energy				
The proposed project would not result in any significant adverse impacts related to energy. No mitigation is required.				
3.7: Geology and Soils				
SC GEO-1	Compliance with applicable California Building Code and Project-specific geotechnical recommendations. Prior to the approval of grading and/or building permits, the Applicant shall provide evidence to the City of Redlands for review and approval that on-site structures, features, and facilities have been designed and will be constructed in conformance with applicable provisions of the California Building Code in effect at the time of City review and the recommendations cited in the Project-specific Geotechnical Engineering Investigation Report. This measure shall be implemented to the satisfaction of the Director of the City of Redlands Department of Development Services, Building and Safety Division, or designee.	Applicant / City of Redlands, or designee	Prior to the approval of grading and/or building permits.	☐
MM GEO-1	Prior to commencement of any grading activity on the Project site, the Applicant shall retain a qualified paleontologist, subject to the review and approval of the Director of the City of Redlands Department of Development Services, Planning Division, or designee. The qualified paleontologist shall be present at the pre-grade conference and shall establish procedures	Qualified Paleontologist / Director of the City of Redlands Department of Development	Prior to the commencement of any grading activities.	

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
	for paleontological resource surveillance and procedures for temporarily halting and redirecting work to permit sampling and identification and evaluation of fossils. If the resources are deemed to be significant, the paleontologist shall determine appropriate actions, in cooperation with the Applicant, which ensure proper exploration and/or salvage. Full-time monitoring and salvage efforts will be necessary whenever previously undisturbed sediments are being disturbed (8 hours per day during grading or trenching activities). Once the earth moving is 50 percent completed, monitoring may be reduced if no fossils are being recovered. The paleontologist shall be empowered to temporarily divert or direct grading operations to facilitate assessment and salvaging of exposed fossils. Collection and processing of matrix samples through fine screens will be necessary to salvage any micro-vertebrate remains. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP).	Services, Planning Division, or designee	During all rough grading and other significant ground-disturbing activities.	☐
3.8: Greenhouse Gas Emissions				
The proposed project would not result in any significant adverse impacts related to greenhouse gas emissions. No mitigation is required.				
3.9: Hazards and Hazardous Materials				
The proposed project would not result in any significant adverse impacts related to hazards and hazardous materials. No mitigation is required.				
3.10: Hydrology and Water Quality				
RCM HYD-1	**Construction General Permit.** Prior to issuance of a grading permit, the Applicant shall obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities (Order No. 2022-0057-DWQ, NPDES No. CAS000002) (Construction General Permit). This shall include submission of Permit Registration Documents (PRDs), including a Notice of Intent for coverage under the permit to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS). The Applicant shall provide the Waste Discharge Identification Number (WDID) to the Director of the City of Redlands Department of Municipal Utilities and Engineering, or designee, to demonstrate proof of coverage under	Applicant / Director of the City of Redlands Department of Municipal Utilities and Engineering, or designee	Prior to issuance of a grading permit.	

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
	the Construction General Permit. Project construction shall not be initiated until a WDID is received from the SWRCB and is provided to the City, or designee. A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared and implemented for the proposed Project in compliance with the requirements of the Construction General Permit. The SWPPP shall identify construction Best Management Practices (BMPs) to be implemented to ensure that the potential for soil erosion and sedimentation is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities. Upon completion of construction and stabilization of the site, a Notice of Termination shall be submitted via SMARTS.			☐
RCM HYD-2	Prior to the commencement of any land disturbing activities, the Applicant shall obtain coverage under the Construction General Permit and develop a Stormwater Pollution Prevention Plan to the City for review and approval that incorporates Best Management Practices to protect water quality during construction activities pursuant to Section 13.54 of the City Municipal Code.	Applicant / Director of the City of Redlands Department of Municipal Utilities and Engineering, or designee	Prior to the commencement of any land disturbing activities.	☐
RCM HYD-3	Prior to issuance of a grading permit, the Applicant shall submit a Final Water Quality Management Plan (Final WQMP) to the Director of the City of Redlands Department of Development Services review and approval in compliance with the requirements of the Santa Ana RWQCB's NPDES Permit Waste Discharge Requirements for the San Bernardino County Flood Control District, the County of San Bernardino, and the Incorporated Cities of San Bernardino County Within the Santa Ana Region Area-Wide Urban Stormwater Runoff Management Program (Order No. R8-2010-0036, NPDES No. CAS618036) (San Bernardino County MS4 Permit). The Final WQMP shall specify the BMPs to be incorporated into the Project design to target pollutants of concern in storm water runoff from the Project site and the necessary operation and maintenance activity for each BMP. The City shall ensure that the BMPs specified in the Final WQMP are incorporated into the final Project design. The proposed BMPs specified in the Final WQMP shall be incorporated into the grading and development plans submitted to the City for review and approval. Project occupancy and operation shall be in accordance with the schedule outlined in the WQMP.	Applicant / Director of the City of Redlands Department of Development Services, Planning Division, or designee	Prior to issuance of a grading permit.	☐
3.11: Land Use and Planning				
The proposed project would not result in any significant adverse impacts related to land use and planning. No mitigation is required.				
3.12 Mineral Resources				
The proposed project would not result in any significant adverse impacts related to mineral resources. No mitigation is required.				

Table 4.A: Mitigation and Monitoring Reporting Program

Draft IS/MND Mitigation Measure or Regulatory Compliance Measures		Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
3.13: Noise				
SC NOI-1	Compliance with Sections 8.06.090F (Noise Disturbances Prohibited) and Chapter 8.06.120 (Exemptions) of the City of Redland's (City) Municipal Code. Construction activities, including operating or causing the operation of any tools or equipment used in site preparation, construction, drilling, repair, alteration, grading, paving, and/or architectural coating shall be restricted to the hours of 7:00 a.m. to 8:00 p.m. Mondays through Saturdays, and are prohibited at any time on Sundays and holidays unless permission is given by the City and noise levels remain below the City's noise level standards. All mobile or stationary internal combustion engine-powered equipment or machinery shall be equipped with exhaust and air intake silencers in proper working order and shall be maintained so that vehicles and their loads are secured from rattling and banging.	Construction Contractor / City of Redlands	During all construction activities.	☐
3.14: Population and Housing				
The proposed project would not result in any significant adverse impacts related to population and housing. No mitigation is required.				
3.15: Recreation				
The proposed project would not result in any significant adverse impacts related to recreation. No mitigation is required.				
3.16: Public Services				
The proposed project would not result in any significant adverse impacts related to public services. No mitigation is required.				
3.17: Transportation				
MM TRA-1	Prior to submission of building permits, the Applicant shall coordinate with the City's Engineering Division to determine the anticipated cost of evaluating and optimizing signal timing parameters at the intersection of Tennessee Street and West Lugonia Avenue. The Applicant shall submit payment to the Engineering Division covering the determined cost in full, consistent with County guidelines. The Building and Safety Division shall confirm the completion of payment prior to issuing building permits. Upon conclusion of Project construction, the Building and Safety Division shall not issue a Certificate of Occupancy to the Applicant until receiving confirmation from the City that signal optimization has been completed.	Applicant / City of Redlands Building and Safety Division	Prior to submission and issuance of building permits.	☐
3.18: Tribal Cultural Resources				
MM TCR-1	**Native American Treatment Agreement.** Prior to the issuance of grading permits, the Applicant shall enter into a Tribal Monitoring Agreement with the Consulting Tribe(s) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to	Applicant / Consulting Tribe(s) and Tribal Monitor	Prior to the issuance of grading permits.	☐

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
	temporarily divert, redirect, or halt the ground-disturbing activities to allow identification, evaluation, and potential recovery of cultural resources.			
MM TCR-2	**Retention of Archaeologist.** Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist shall conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal Representative. The training session shall focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event.	Qualified Archaeologist / Consulting Tribe(s)	Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits.	☐
MM TCR-3	**Cultural Resource Management Plan.** Prior to any ground-disturbing activities the Project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the Project site. This Plan shall be written in consultation with the Consulting Tribe(s) and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the Project schedule.	Project Archaeologist / Consulting Tribe(s)	Prior to any ground-disturbing activities.	☐
MM TCR-4	**Pre-Grade Meeting.** The retained qualified archeologist and Consulting Tribe(s) representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.	Qualified Archaeologist / Consulting Tribe(s)	Prior to any ground-disturbing activities.	☐
MM TCR-5	**On-site Monitoring.** During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and	Construction Contractor, Qualified Archaeologist, and Native American	During all ground-disturbing activities.	☐

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
	Native American monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.	Monitor / Consulting Tribe(s)		
MM TCR 6	**Inadvertent Discovery of Cultural Resources.** In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground-disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed. If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and Consulting Tribe(s) of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the Consulting Tribe(s), and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference: A. Full avoidance. B. If avoidance is not feasible, Preservation in place. C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction. D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)	Construction Contractor, Qualified Archaeologist, and Native American Monitor / Consulting Tribe(s)	During construction.	☐
MM TCR-7	**Inadvertent Discovery of Human Remains.** The Consulting Tribe(s) requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. No photographs are to be taken except by the coroner, with written approval by the Consulting Tribe(s).	Construction Contractor / Consulting Tribe(s)	During construction.	

Table 4.A: Mitigation and Monitoring Reporting Program

Draft IS/MND Mitigation Measure or Regulatory Compliance Measures		Responsible Party / Approving Agency	Timing for Mitigation Measure	Tracking
	A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e., clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98. B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5. C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98 D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial shall not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations shall be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.			☐
MM TCR-8	**Final Report.** The final report[s] created as a part of the Project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the City and Consulting Tribe(s) for review and comment. After approval of all parties, the final reports shall be submitted to the Eastern Information Center, and the Consulting Tribe(s).	Qualified Archaeologist / Consulting Tribe(s)	Upon completion of tribal cultural resource monitoring activities.	☐
3.19: Utilities and Service Systems				
The proposed project would not result in any significant adverse impacts related to utilities and service systems. No mitigation is required.				
3.20: Wildfire				
The proposed project would not result in any significant adverse impacts related to wildfire. No mitigation is required.				

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4.0 MITIGATION MONITORING AND REPORTING PROGRAM

4.1 MITIGATION MONITORING REQUIREMENTS

Public Resources Code (PRC) Section 21081.6 (enacted by the passage of Assembly Bill 3180) mandates that where significant effects have been identified, the following requirements shall apply to all reporting or mitigation monitoring programs:

- The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes that have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.

- The lead agency shall specify the location and custodian of the documents or other materials that constitute the record of proceedings upon which its decision is based.

- A public agency shall provide measures to mitigate or avoid significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents that address required mitigation measures or, in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.

- Prior to the close of the public review period for a Draft Mitigated Negative Declaration (MND), a responsible agency, or a public agency having jurisdiction over natural resources affected by the project, shall either (1) submit to the lead agency complete and detailed performance objectives for mitigation measures that would address the significant effects on the environment identified by the responsible agency or agency having jurisdiction over natural resources affected by the project, or (2) refer the lead agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a lead agency by a responsible agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures that mitigate impacts to resources that are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or noncompliance with that requirement by a responsible agency or agency having jurisdiction over natural resources affected by a project shall not limit the authority of the responsible agency or agency having jurisdiction over natural resources affected by a project, or the authority of the lead agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

4.2 MITIGATION MONITORING PROCEDURES

The mitigation monitoring and reporting program has been prepared in compliance with PRC Section 21081.6. It describes the requirements and procedures to be followed by the City of Redlands (City) to ensure that all mitigation measures adopted as part of the proposed Texas Street Residential Project (Project) will be carried out as described in the Final IS/MND.

Table 4.A lists each of the mitigation measures (MM) and regulatory compliance measures (RCM) specified in the Draft IS/MND and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 4.A: Mitigation and Monitoring Reporting Program

Draft IS/MND Mitigation Measure or Regulatory Compliance Measures		Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
3.1: Aesthetics				
The proposed project would not result in any significant adverse impacts related to aesthetics. No mitigation is required.				
3.2: Agricultural and Forestry Resources				
The proposed project would not result in any significant adverse impacts related to agriculture and forestry resources. No mitigation is required.				
3.3: Air Quality				
The proposed project would not result in any significant adverse impacts related to air quality. No mitigation is required.				
3.4: Biological Resources				
MM BIO-1	A pre-construction burrowing owl clearance survey shall be conducted no less than 14 days prior to any vegetation removal or ground-disturbing activities to avoid impacts to burrowing owls and/or occupied burrows. The pre-construction clearance survey shall be conducted by a qualified biologist and in accordance with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). A second clearance survey shall be conducted within 24 hours prior to ground disturbance. Documentation of surveys and findings shall be submitted to the City of Redlands for review and file. If no burrowing owls or occupied burrows are detected, Project activities may begin, and no additional avoidance and minimization measures shall be required. If an occupied burrow is found outside, but within 500 feet, of the development footprint, the qualified biologist shall establish a "no-disturbance" buffer around the burrow location(s). The size of the "no-disturbance" buffer shall be determined in consultation with the California Department of Fish and Wildlife (CDFW) and be based on the species status (i.e., breeding, non-breeding) and proposed level of disturbance. If an occupied burrow is found within the development footprint and cannot be avoided, a burrowing owl exclusion and mitigation plan shall be prepared and submitted to CDFW for approval prior to initiating Project activities.	Qualified Biologist / Director of the City of Redlands Department of Development Services, or designee	No less than 14 days prior to any vegetation removal or ground-disturbing construction activities. A second clearance survey shall be conducted within 24 hours prior to ground disturbance.	☐
MM BIO-2	Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey shall be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season. Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered "take" and is potentially punishable by fines and/or imprisonment. If Project-related activities are to be initiated during the nesting season (January 1 to	Qualified Biologist / Director of the City of Redlands Department of Development Services, or designee	No more than 3 days prior to any vegetation removal or ground disturbing activities.	☐

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
	August 31), a pre-construction nesting bird clearance survey shall be conducted by a qualified biologist no more than three (3) days prior to the start of any vegetation removal or ground disturbing activities. The qualified biologist shall survey all suitable nesting habitat within the Project impact area, and areas within a biologically defensible buffer zone surrounding the Project impact area. If no active bird nests are detected during the clearance survey, Project activities may begin, and no additional avoidance and minimization measures shall be required. If an active bird nest is found, the species shall be identified, and a "no-disturbance" buffer shall be established around the active nest. The size of the "no-disturbance" buffer shall be increased or decreased based on the judgement of the qualified biologist and level of activity and sensitivity of the species. The qualified biologist shall periodically monitor any active bird nests to determine if Project-related activities occurring outside the "no-disturbance" buffer disturb the birds and if the buffer should be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, Project activities within the "no-disturbance" buffer may occur following an additional survey by the qualified biologist to search for any new bird nests in the restricted area.			
3.5: Cultural Resources				
MM CUL-1	Prior to the issuance of a grading permit, the Applicant shall provide the Director of the City of Redlands Department of Development Services, or designee, with evidence that it has retained the services of a qualified archaeologist that meets the Secretary of the Interior standards on an on-call basis. Archaeological monitoring shall occur during all excavation activities down to a depth of 3 feet within 100 feet of the former residence location. In the event that cultural resources are discovered during Project activities, all work in the immediate vicinity of the find (within a 100-foot buffer) shall cease and the project archaeologist shall assess the find and determine appropriate treatment. Work on the other portions of the Project outside of the buffered area may continue during this assessment period.	Qualified Archaeologist / Director of the City of Redlands Department of Development Services, or designee	Prior to the issuance of a grading permit.	☐
MM CUL-2	If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the qualified archaeologist shall develop a Monitoring and Treatment Plan for the remainder of the Project site. The Monitoring and Treatment Plan shall be developed in coordination with the Applicant and the City. The Applicant shall secure a monitoring agreement with the archaeologist prior to the recommencement of work, and the archaeologist shall monitor during the remainder of the ground disturbance activities on the Project site and implement the Plan accordingly.	Qualified Archaeologist / Director of the City of Redlands Department of Development Services, or designee	Prior to the recommencement of work, and for the remainder of the ground disturbing activities.	☐

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
RCM CUL-1	In the event that human remains or funerary objects are encountered on the Project site during any construction activities associated with the Project, work within 100 feet of the discovery shall be redirected and the County Coroner notified immediately consistent with the requirements of California Code of Regulations (CCR) Section 15064.5(e). State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. If the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which shall determine and notify a Most Likely Descendant (MLD). With the permission of the property owner, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Consistent with CCR Section 15064.5(d), if the remains are determined to be Native American and an MLD is notified, the Applicant shall consult with the MLD as identified by the NAHC to develop an agreement for treatment and disposition of the remains. Prior to the issuance of grading permits, the Director of the City of Redlands Department of Development Services, or designee, shall verify that all grading plans specify the requirements of CCR Section 15064.5(e), State Health and Safety Code Section 7050.5, and PRC Section 5097.98, as stated above.	Construction Contractor and County Coroner / Director of the City of Redlands Department of Development Services, or designee	During construction activities.	☐
3.6: Energy				
The proposed project would not result in any significant adverse impacts related to energy. No mitigation is required.				
3.7: Geology and Soils				
SC GEO-1	Compliance with applicable California Building Code and Project-specific geotechnical recommendations. Prior to the approval of grading and/or building permits, the Applicant shall provide evidence to the City of Redlands for review and approval that on-site structures, features, and facilities have been designed and will be constructed in conformance with applicable provisions of the California Building Code in effect at the time of City review and the recommendations cited in the Project-specific Geotechnical Engineering Investigation Report. This measure shall be implemented to the satisfaction of the Director of the City of Redlands Department of Development Services, Building and Safety Division, or designee.	Applicant / City of Redlands, or designee	Prior to the approval of grading and/or building permits.	☐
MM GEO-1	Prior to commencement of any grading activity on the Project site, the Applicant shall retain a qualified paleontologist, subject to the review and approval of the Director of the City of Redlands Department of Development Services, Planning Division, or designee. The	Qualified Paleontologist / Director of the City of Redlands Department	Prior to the commencement of any grading	

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
	qualified paleontologist shall be present at the pre-grade conference and shall establish procedures for paleontological resource surveillance and procedures for temporarily halting and redirecting work to permit sampling and identification and evaluation of fossils. If the resources are deemed to be significant, the paleontologist shall determine appropriate actions, in cooperation with the Applicant, which ensure proper exploration and/or salvage. Full-time monitoring and salvage efforts will be necessary whenever previously undisturbed sediments are being disturbed (8 hours per day during grading or trenching activities). Once the earth moving is 50 percent completed, monitoring may be reduced if no fossils are being recovered. The paleontologist shall be empowered to temporarily divert or direct grading operations to facilitate assessment and salvaging of exposed fossils. Collection and processing of matrix samples through fine screens will be necessary to salvage any micro-vertebrate remains. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP).	of Development Services, Planning Division, or designee	activities. During all rough grading and other significant ground-disturbing activities.	☐
3.8: Greenhouse Gas Emissions				
The proposed project would not result in any significant adverse impacts related to greenhouse gas emissions. No mitigation is required.				
3.9: Hazards and Hazardous Materials				
The proposed project would not result in any significant adverse impacts related to hazards and hazardous materials. No mitigation is required.				
3.10: Hydrology and Water Quality				
RCM HYD-1	**Construction General Permit.** Prior to issuance of a grading permit, the Applicant shall obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities (Order No. 2022-0057-DWQ, NPDES No. CAS000002) (Construction General Permit). This shall include submission of Permit Registration Documents (PRDs), including a Notice of Intent for coverage under the permit to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS). The Applicant shall provide the Waste Discharge Identification Number (WDID) to the Director of the City of Redlands Department	Applicant / Director of the City of Redlands Department of Municipal Utilities and Engineering, or designee	Prior to issuance of a grading permit.	

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
	of Municipal Utilities and Engineering, or designee, to demonstrate proof of coverage under the Construction General Permit. Project construction shall not be initiated until a WDID is received from the SWRCB and is provided to the City, or designee. A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared and implemented for the proposed Project in compliance with the requirements of the Construction General Permit. The SWPPP shall identify construction Best Management Practices (BMPs) to be implemented to ensure that the potential for soil erosion and sedimentation is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities. Upon completion of construction and stabilization of the site, a Notice of Termination shall be submitted via SMARTS.			☐
RCM HYD-2	Prior to the commencement of any land disturbing activities, the Applicant shall obtain coverage under the Construction General Permit and develop a Stormwater Pollution Prevention Plan to the City for review and approval that incorporates Best Management Practices to protect water quality during construction activities pursuant to Section 13.54 of the City Municipal Code.	Applicant / Director of the City of Redlands Department of Municipal Utilities and Engineering, or designee	Prior to the commencement of any land disturbing activities.	☐
RCM HYD-3	Prior to issuance of a grading permit, the Applicant shall submit a Final Water Quality Management Plan (Final WQMP) to the Director of the City of Redlands Department of Development Services review and approval in compliance with the requirements of the Santa Ana RWQCB's NPDES Permit Waste Discharge Requirements for the San Bernardino County Flood Control District, the County of San Bernardino, and the Incorporated Cities of San Bernardino County Within the Santa Ana Region Area-Wide Urban Stormwater Runoff Management Program (Order No. R8-2010-0036, NPDES No. CAS618036) (San Bernardino County MS4 Permit). The Final WQMP shall specify the BMPs to be incorporated into the Project design to target pollutants of concern in storm water runoff from the Project site and the necessary operation and maintenance activity for each BMP. The City shall ensure that the BMPs specified in the Final WQMP are incorporated into the final Project design. The proposed BMPs specified in the Final WQMP shall be incorporated into the grading and development plans submitted to the City for review and approval. Project occupancy and operation shall be in accordance with the schedule outlined in the WQMP.	Applicant / Director of the City of Redlands Department of Development Services, Planning Division, or designee	Prior to issuance of a grading permit.	☐
3.11: Land Use and Planning				
The proposed project would not result in any significant adverse impacts related to land use and planning. No mitigation is required.				
3.12 Mineral Resources				
The proposed project would not result in any significant adverse impacts related to mineral resources. No mitigation is required.				
3.13: Noise				

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
SC NOI-1	Compliance with Sections 8.06.090F (Noise Disturbances Prohibited) and Chapter 8.06.120 (Exemptions) of the City of Redland's (City) Municipal Code. Construction activities, including operating or causing the operation of any tools or equipment used in site preparation, construction, drilling, repair, alteration, grading, paving, and/or architectural coating shall be restricted to the hours of 7:00 a.m. to 8:00 p.m. Mondays through Saturdays, and are prohibited at any time on Sundays and holidays unless permission is given by the City and noise levels remain below the City's noise level standards. All mobile or stationary internal combustion engine-powered equipment or machinery shall be equipped with exhaust and air intake silencers in proper working order and shall be maintained so that vehicles and their loads are secured from rattling and banging.	Construction Contractor / City of Redlands	During all construction activities.	☐
3.14: Population and Housing				
The proposed project would not result in any significant adverse impacts related to population and housing. No mitigation is required.				
3.15: Recreation				
The proposed project would not result in any significant adverse impacts related to recreation. No mitigation is required.				
3.16: Public Services				
The proposed project would not result in any significant adverse impacts related to public services. No mitigation is required.				
3.17: Transportation				
MM TRA-1	Prior to submission of building permits, the Applicant shall coordinate with the City's Engineering Division to determine the anticipated cost of evaluating and optimizing signal timing parameters at the intersection of Tennessee Street and West Lugonia Avenue. The Applicant shall submit payment to the Engineering Division covering the determined cost in full, consistent with County guidelines. The Building and Safety Division shall confirm the completion of payment prior to issuing building permits. Upon conclusion of Project construction, the Building and Safety Division shall not issue a Certificate of Occupancy to the Applicant until receiving confirmation from the City that signal optimization has been completed.	Applicant / City of Redlands Building and Safety Division	Prior to submission and issuance of building permits.	
3.18: Tribal Cultural Resources				
MM TCR-1	**Native American Treatment Agreement.** Prior to the issuance of grading permits, the Applicant shall enter into a Tribal Monitoring Agreement with the Consulting Tribe(s) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification,	Applicant / Consulting Tribe(s) and Tribal Monitor	Prior to the issuance of grading permits.	☐

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
	evaluation, and potential recovery of cultural resources.			
MM TCR-2	**Retention of Archaeologist.** Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist shall conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal Representative. The training session shall focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event.	Qualified Archaeologist / Consulting Tribe(s)	Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits	☐
MM TCR-3	**Cultural Resource Management Plan.** Prior to any ground-disturbing activities the Project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the Project site. This Plan shall be written in consultation with the Consulting Tribe(s) and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the Project schedule.	Project Archaeologist / Consulting Tribe(s)	Prior to any ground-disturbing activities.	☐
MM TCR-4	**Pre-Grade Meeting.** The retained qualified archeologist and Consulting Tribe(s) representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.	Qualified Archaeologist / Consulting Tribe(s)	Prior to any ground-disturbing activities.	☐
MM TCR-5	**On-site Monitoring.** During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074.	Construction Contractor, Qualified Archeoglogist, and Native American	During all ground-disturbing activities.	☐

Table 4.A: Mitigation and Monitoring Reporting Program

	Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
	Archaeological and Native American monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.	Monitor / Consulting Tribe(s)		
MM TCR 6	**Inadvertent Discovery of Cultural Resources.** In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground-disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed. If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and Consulting Tribe(s) of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the Consulting Tribe(s), and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference: A. Full avoidance. B. If avoidance is not feasible, Preservation in place. C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction. D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)	Construction Contractor, Qualified Archeoglogist, and Native American Monitor / Consulting Tribe(s)	During construction.	☐
MM TCR-7	**Inadvertent Discovery of Human Remains.** The Consulting Tribe(s) requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. No photographs are to be taken except by the coroner, with written approval by the Consulting Tribe(s). A. Should human remains and/or cremations be encountered on the surface or	Construction Contractor / Consulting Tribe(s)	During construction.	

Table 4.A: Mitigation and Monitoring Reporting Program

Draft IS/MND Mitigation Measure or Regulatory Compliance Measures	Responsible Party/ Approving Agency	Timing for Mitigation Measure	Tracking
during any and all ground-disturbing activities (i.e., clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98. B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5. C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98 **D.** If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial shall not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations shall be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.			☐
MM TCR-8 **Final Report.** The final report[s] created as a part of the Project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the City and Consulting Tribe(s) for review and comment. After approval of all parties, the final reports shall be submitted to the Eastern Information Center, and the Consulting Tribe(s).	Qualified Archaeologist / Consulting Tribe(s)		☐
3.19: Utilities and Service Systems			
The proposed project would not result in any significant adverse impacts related to utilities and service systems. No mitigation is required.			
3.19: Wildfire			
The proposed project would not result in any significant adverse impacts related to wildfire. No mitigation is required.			

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FINAL

INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE PROJECT

CITY OF REDLANDS

SAN BERNARDINO COUNTY, CALIFORNIA



LSA

January 2024

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FINAL

INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

THE NEIGHBORHOODS AT LUGONIA VILLAGE PROJECT

CITY OF REDLANDS

SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:

City of Redlands
Development Services Department, Planning Division
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Prepared by:

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Project No. CRX2202

LSA

January 2024

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APPENDIX

A: DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

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LIST OF ACRONYMS AND ABBREVIATIONS

CEQA	California Environmental Quality Act
City	City of Redlands
IS/MND	Initial Study/Mitigated Negative Declaration
NOI	Notice of Intent
Project, proposed Project	The Neighborhoods at Lugonia Village Project

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1.0 INTRODUCTION

This section comprises the Comments and Responses of the Final Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Neighborhoods at Lugonia Village Project (proposed Project) in the City of Redlands, San Bernardino County, California. The purpose of this document is to respond to all comments received by the City of Redlands (City) regarding the environmental information and analyses contained in the IS/MND.

Consistent with *State CEQA Guidelines* Section 15073 and in accordance with the City's Local California Environmental Quality Act (CEQA) Procedures, a Notice of Intent (NOI) to adopt a Mitigated Negative Declaration was sent to responsible agencies and trustee agencies in addition to various public agencies, citizen groups, and interested individuals concerned with the Project. In addition, the NOI was filed with the San Bernardino County Clerk and the State Clearinghouse on December 6, 2023.

The Draft IS/MND (**Appendix A**) was circulated for public review for a period of 30 days, from December 6, 2023, to January 4, 2024. Copies of the Draft IS/MND were made available for public review at the City's office located at 35 Cajon Street, Suite 20, Redlands, CA 92373 or online on the City's website at https://www.cityofredlands.org/post/environmental-documents. One comment letter was received during the public review period. Comments were received from one regional agency.

The City is the Lead Agency under CEQA and is required to consider agency and public comments on the IS/MND. Although preparation of responses to comments on an IS/MND is not required, responses have been prepared.

The following is a list of the agencies and interested parties that commented on the IS/MND prior to the close of the public comment period. The comments received have been organized in a manner that facilitates a particular comment or set of comments. Each comment letter received is indexed with an alphanumeric code below.

Comment Letter Index

Comment Code	Signatory	Date
Regional Agencies		
R-1	OmniTrans	December 12, 2023

1.1 FORMAT OF RESPONSE TO COMMENTS

Responses to the comment letter are provided on the following pages. The comment letter index number is provided at the top of the comment letter, and individual points within the letter are numbered along the right-hand margin of the letter. The City's responses to the comment letter immediately follow the letter and are referenced by index numbers in the margins.

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2.0 RESPONSE TO COMMENTS

2.1 REGIONAL AGENCIES

From: Anna Jaiswal
Sent: Tuesday, December 12, 2023 2:52 PM
To: Ryan Murphy
Subject: Comment on IS/MND for TTM 20571

You don't often get email from anna.jaiswal@omnitrans.org. Learn why this is important

[**NOTICE:** This message originated outside of City of Redlands -- **DO NOT CLICK** on **links** or open **attachments** unless you are sure the content is safe.]

Hi Ryan,

Thanks for sharing the notice for the Neighborhoods at Lugonia Village Project. Omnitrans' nearest bus stops, on Lugonia at Texas and Lugonia at Tennessee, are further apart than our normal bus stop spacing standards; I think the reason is because there has not been ADA-compliant sidewalk on which to install a bus stop previously on Lugonia at Karon. So with this development, it's an ideal opportunity to include a bus stop to serve the residents.

R-1-1

So I would request that the project include a curb-connected sidewalk boarding area (a 5'x8' boarding area is required for ADA, but I would recommend making it 8'-10'-wide sidewalk for a 30'-40' length in order to accommodate a future bus shelter). I would probably recommend putting it on Lugonia westbound after Karon, before the main entrance at New York.

Our transit design guidelines are available here - https://omnitrans.org/busstops/. I am also happy to review plans. Please let me know if you have any questions.

Thanks so much!

Anna Jaiswal
Development Planning Manager
OmniTrans
1700 West Fifth Street
San Bernardino, CA 92411
www.omnitrans.org
Work: 909-379-7256
Email: anna.jaiswal@omnitrans.org

Follow @Omnitrans:

2.1.1 OmniTrans

Letter Code: R-1
Commenter: Anna Jaiswal, Development Planning Manager
Date: December 12, 2023

Response to Comment R-1-1

This comment states that OmniTrans' nearest bus stops to the proposed Project, located on Lugonia Avenue at Texas Street and Tennessee Street, are further apart than OmniTrans' typical bus stop spacing standards. The comment also states that the proposed development offers an ideal opportunity to include a bus stop to serve future residents. Specifically, the comment requests that the proposed Project include a curb-connected sidewalk boarding area (between 8 and 10 feet wide and 30 and 40 feet long in order to accommodate a future bus shelter) on Lugonia Avenue, between Karon Street and the main entrance to the Project at New York Street.

The City has made this request a condition of Project approval, and the Project applicant has demonstrated to the City that the requested bus stop on Lugonia Avenue can be accommodated in the final design plans. As such, Section 2.2.4, Access, Circulation, and Parking, of the Draft IS/MND has been revised to reflect that the proposed bus stop would be included as a condition of approval. These edits are included in Chapter 3, Errata, of this Final IS/MND. These changes are generally minor changes that do not constitute significant new information, a change in the conclusions of the environmental analysis, or require recirculation of the document (*State CEQA Guidelines* Section 15073.5).

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3.0 ERRATA

This section of the Final IS/MND provides text changes to the Draft IS/MND that have been made to clarify, amplify, or make minor edits to the Draft IS/MND text for the proposed Neighborhoods at Lugonia Village Project (proposed Project). Such changes are a result of further review of, and public comments related to, the Draft IS/MND. The changes described in this section are generally minor changes that do not constitute significant new information, change the conclusions of the environmental analysis, or require recirculation of the document (*State CEQA Guidelines* Section 15073.5).

Such changes to the Draft IS/MND are indicated in this section under the appropriate Draft IS/MND section. Deletions are shown with ~~strikethrough~~ and additions are shown with underline.

3.1 SECTION 2.2.4, ACCESS, CIRCULATION, AND PARKING

Vehicular access to the Project site would be provided via two driveways from West Lugonia Avenue (a signalized intersection at New York Street/West Lugonia Avenue and a right-in/right-out driveway on the southwest corner of the Project site), one driveway from the proposed Pennsylvania Avenue extension, and one driveway from Karon Street. As discussed above, the proposed Pennsylvania Avenue extension would either end in a cul-de-sac just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street or would extend from Karon Street west to Tennessee Street, creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. In addition, the City will require that the proposed Project include a curb-connected sidewalk bus boarding area on Lugonia Avenue, between Karon Street and the main entrance to the Project at New York Street, as a condition of approval. The sidewalk at the bus stop would be between 8 and 10 feet wide and 30 and 40 feet long in order to accommodate a future bus shelter. The bus stop would be designed to comply with OmniTrans' transit design guidelines and would be operated and maintained by OmniTrans. The bus stop would serve residents of the proposed development as well as the surrounding area.

On-site parking within the apartment complex and townhome neighborhoods would be provided via a 26-foot-wide internal street system within each neighborhood. The apartment complex neighborhood would include 241 garage parking spaces, 325 carport spaces, 7 parallel parking spaces, 139 open stall parking spaces, and 32 electric vehicle charging spaces for a total of 744 parking spaces for residents. The townhome neighborhood would include 144 garage parking spaces for residents and 21 guest parking spaces for a total of 165 parking spaces. Each of the 18 single-family detached homes would include a 2-car garage, for a total of 36 parking spaces. Overall, the proposed Project would include a total of 945 parking spaces. The internal street system would also serve as a fire access system for first responders.

Figure 6 provides an illustrative view of the proposed landscape design, including the general locations of parkway and street tree plantings, the planned tree species mix, and the locations of proposed sidewalks and bike paths as well as the proposed recreation lawn and play area. As shown in **Figure 6,** pedestrian access within the Project site would be provided via internal walkways. A 6-foot-wide sidewalk would also be provided along West Lugonia Avenue, Pennsylvania Avenue, and Karon Street abutting the Project site.

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RESOLUTION NO. 8551

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS ADOPTING A MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING/REPORTING PROGRAM AND APPROVING THE SOCIO-ECONOMIC COST/BENEFIT STUDY FOR THE LUGONIA VILLAGE RESIDENTIAL PROJECT LOCATED ON THE NORTH SIDE OF WEST LUGONIA AVENUE, SOUTH SIDE OF PENNSYLVANIA AVENUE, AND WEST SIDE OF KARON STREET.

WHEREAS, Redlands Summit, LLC, has filed applications for General Plan Amendment No. 143, Amendment No. 48 to Specific Plan No. 40 (East Valley Corridor Specific Plan), Zone Change No. 469, Tentative Parcel Map No. 20469, Tentative Tract Map No. 20490 and No. 20491, and Commission Review & Approval Nos. 940, 941, and 942 for a residential development located on the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (APN: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000) (the "Project"); and

WHEREAS, an Initial Study and Mitigated Negative Declaration was prepared for the Project and circulated for public review for a period of thirty days beginning on December 6, 2023, and ending on January 4, 2024; and

WHEREAS, on January 23, 2024, the Planning Commission held a public hearing and considered the staff report, oral report, the testimony, and the written evidence submitted by and on behalf of the applicant and by members of the public; and

WHEREAS, on January 23, 2024, the Planning Commission recommended to the City Council that the Mitigated Negative Declaration and Mitigation Monitoring/Reporting Program be adopted; and

WHEREAS, on January 23, 2024, the Planning Commission recommended that the City Council adopt the Socio-Economic Cost/Benefit Study prepared for the project; and

WHEREAS, the Mitigated Negative Declaration and related materials for the Project that were reviewed by the Planning Commission in making its recommendation for approval have been forwarded to the City Council; and

WHEREAS, on or about February 23, 2024, notice of the City Council's public hearing for the Project, including the Mitigated Negative Declaration and Socio-Economic Cost/Benefit Study, was published in the Redlands Daily Facts by the City Clerk; and

WHEREAS, the City Council held a duly noticed public hearing on March 5, 2024, at which interested persons had the opportunity to provide verbal and written testimony on the Project, proposed Mitigated Negative Declaration and Socio-Economic Cost/Benefit Study.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. CEQA Compliance. As the decision-making body for the Project, the City Council has reviewed and considered the information contained in the Initial Study/Mitigated Negative Declaration ("MND"), related technical studies and analyses, public comments received, the Responses to Comments, and supporting documentation. The City Council determines that the MND and related documents contain a complete and accurate reporting of the environmental impacts and mitigation measures associated with the Project. The City Council finds that the MND was prepared in compliance with CEQA, and that the City complied with CEQA's procedural and substantive requirements.

Section 2. Independent Judgment of Lead Agency. The MND for the Project, prepared by the City's environmental consultant, reflects the City's independent judgment and analysis. The City has exercised independent judgment and analysis in accordance with Public Resources Code Section 21082.1(c)(3) in managing as appropriate the environmental consultant, and directing the consultant in the preparation of the MND. The City Council has independently reviewed and analyzed the MND and accompanying technical studies/reports, and finds that the MND reflects the independent judgment and analysis of the City.

Section 3. Adoption of Mitigated Negative Declaration. The City Council finds on the basis of the whole record that there is no substantial evidence that the Project will have a significant effect on the environment, including mitigation measures and any project design features, and hereby adopts the MND for the Project.

Section 4. Adoption of Mitigation Monitoring/Reporting Program. Pursuant to Public Resources Code section 21081.6, the City hereby adopts the Mitigation Monitoring/Reporting Program attached to the MND, and all mitigation measures are included as conditions of approval for the Project.

Section 5. Notice of Determination. The City Council adopt the MND for the Project and the accompanying Mitigation Monitoring and Reporting Program and direct staff to file and post a Notice of Determination in accordance with the State CEQA Guidelines.

Section 6. Custodian of Records. The custodian of documents and other material which constitute the record of proceedings upon which its decision is based is the Development Services Director or designee, and all records are located in the City's Development Services Department.

Section 7. Approval of Socio-Economic Cost/Benefit Study. The City Council of the City of Redlands hereby approves and adopts the Socio-Economic Cost/Benefit Study prepared for the Project based upon the following findings:

A. The Project will not create unmitigated physical blight within the City or overburden public services including, without limitation, the sufficiency of Police and Fire Protection services.

The Project will not create significant unmitigable physical blight in the City of Redlands ("City") or overburden public services, including without limitation police and fire protection services, because the mitigation measures for environmental impacts, described in the study, have been added to the project as Conditions of Approval.

The Project developer will make improvements to facilitate implementation of the Project, including the construction of adjacent roadways and roadway improvements the project frontage. The Project would provide connections to existing City infrastructure. Utility lines less than 66kV in size or capacity will be placed underground. The Project developer is required to fund the project's fair share allocation of any necessary public infrastructure associated with development of the Project.

B. The benefits to the City resulting from development of the Project outweigh any direct cost to the City that may result.

The Socio-Economic Cost/Benefit Study demonstrates that the Project will generate "new net" annual revenues of approximately $578,376 and approximately $372,710 in costs, and therefore will result in a positive balance of $205,666 (or cost/benefit ratio of +1.55). For every dollar the City spends in providing services to the Project, the City will receive $1.55 in "new net" revenue. The Project would provide for the development of 541 new residential units. The project also provides 28 very-low-income affordable housing units. Schools will be enhanced with the payment of school fees. Further, with the additional revenue provided to the City through increased property tax assessment, and the payment of development impact fees, indirect funding will be provided for cultural enhancements, downtown district enhancements, public safety (Police and Fire) enhancements, and traffic enhancements.

Section 8. Effective Date. This Resolution shall take effect upon adoption.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2024.

_____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

RESOLUTION NO. 8552

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS ADOPTING AMENDMENT NO. 143 TO THE REDLANDS GENERAL PLAN TO AMEND THE LAND USE DESIGNATION OF A PORTION OF THE 24.4-ACRE PROJECT SITE, LOCATED ON THE NORTH SIDE OF WEST LUGONIA AVENUE, SOUTH SIDE OF PENNSYLVANIA AVENUE, AND WEST SIDE OF KARON STREET.

WHEREAS, Redlands Summit, LLC ("Applicant"), has filed an application for General Plan Amendment No. 143 to change the General Plan land use designation from Commercial (approximately 17.9 acres) to High Density Residential, and change the General Plan land use designation from Parks/Golf Courses (approximately 1.0 acre) to High Density Residential, for three parcels located on the north side of West Lugonia Avenue, south side of a proposed extension of Pennsylvania Avenue, and west side of Karon Street (APNs: 0167-171-05-0000, 0167-171-06-0000, and portion of 0167-171-04-0000); and

WHEREAS, a portion of APN 0167-171-04-0000 with frontage along Karon Street, averaging approximately 115 feet in depth (measured from Karon Street) and totaling approximately 145,590 square-feet (or approximately 3.35 acres) in area, is currently designated as Low Density Residential and the proposed single-family detached development is consistent; and

WHEREAS, the Applicant has filed concurrent applications for Amendment No. 48 to Specific Plan No. 40 (East Valley Corridor Specific Plan), Zone Change No. 469, Tentative Parcel Map No. 20469, Tentative Tract Map No. 20490 and No. 20491, and Commission Review & Approval No. 940, 941 and 942 for a residential development located on the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (APN: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000) (the "Project"); and

WHEREAS, the California Legislature has consistently recognized the continuing need for new housing units and affordable housing in California, stating in Government Code Section 65580, that "the availability of housing is of vital statewide importance, and the early attainment of decent housing… is a priority of the highest order" and, further, that, "local… governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community"; and

WHEREAS, the City of Redlands adopted its 6th Cycle Housing Element (the 2021-2029 Housing Element) on October 4, 2022, the City will implement numerous policies and programs as outlined in the 2021-2029 Housing Element, and the City will rezone certain parcels identified in the Housing Sites Inventory List to accommodate future high-density housing including housing affordable to lower-income households; and

WHEREAS, the Housing Sites Inventory List contained in the City's 2021-2029 Housing Element includes two parcels (APNs 0167-171-04-0000 and 0167-171-05-0000) within the proposed project site that are to be rezoned for future housing projects; and

WHEREAS, the proposed Project is consistent with the 2021-2029 Housing Element, and approval of the General Plan Amendment is necessary to achieve consistency with the goals of the new 2021-2029 Housing Element as well as the pending rezoning program contained therein; and

WHEREAS, on January 23, 2024, the Planning Commission held a noticed public hearing at which interested persons had an opportunity to testify in support of, or in opposition to, the Project, and at which the Planning Commission considered the Project; and

WHEREAS, on January 23, 2024, the Planning Commission recommended to the City Council that General Plan Amendment No. 143 be approved; and

WHEREAS, on or about February 23, 2024, notice of the City Council's public hearing for the General Plan Amendment was published in the Redlands Daily Facts by the City Clerk; and

WHEREAS, on March, 5, 2024, the City Council held a public hearing and considered the staff written and oral reports, the recommendation of the Planning Commission, the testimony and written evidence submitted by and on behalf of the applicant, and testimony by members of the public; and

WHEREAS, following the public hearing on the General Plan Amendment, the City Council determined that adoption of the Amendment is in the best interests of the public health, safety, and general welfare.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. General Plan Consistency. General Plan Amendment No. 143 is consistent with the City's 2021-2029 Housing Element that plans for the development of a total of 3,516 new dwelling units (the City's allocation of the Regional Housing Needs Assessment) including very low- and low-income households. The proposed project will develop a total of 541 dwelling units, including 28 very low-income affordable housing units within the project, on two parcels that are currently identified in the 2021-2029 Housing Element as future housing sites. The proposed project is consistent with numerous General Plan policies and actions, and the project will not otherwise result in any inconsistencies within the 2035 General Plan.

Section 2. Approval. General Plan Amendment No. 143 is hereby approved to amend the General Plan designation of approximately 17.9 acres from Commercial to High Density Residential and amend the General Plan designation of approximately 1 acre from Parks/Golf Courses to High Density Residential located on the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (APN: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000), as more particularly shown on the map attached hereto as Exhibit "A."

Section 3. Effective Date. This Resolution shall become effective upon adoption.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2024.

_____

Eddie Tejeda, Mayor

ATTEST:

_____

Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

Exhibit A-1
Existing General Plan Land Use Designation

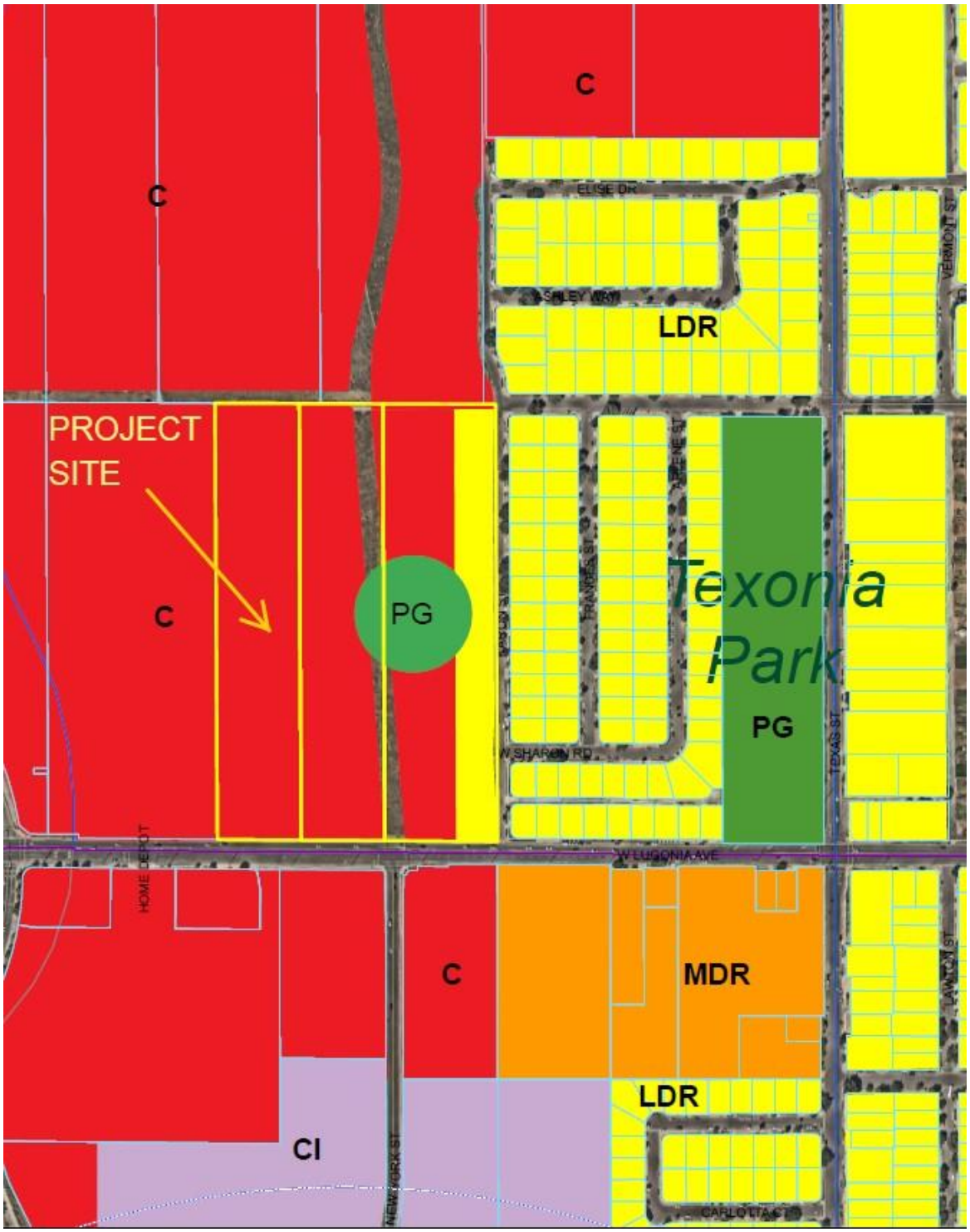
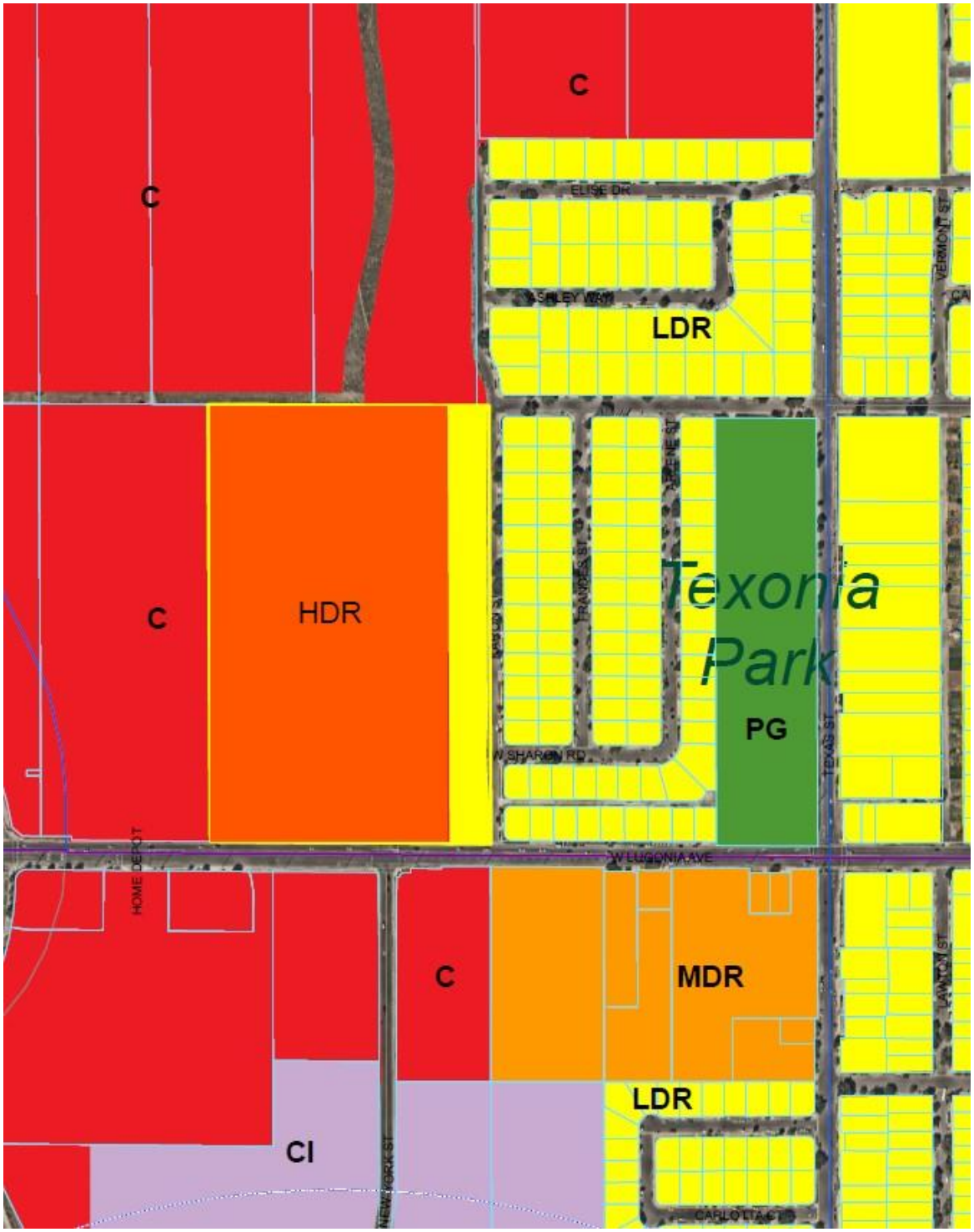


Exhibit A-2
Proposed General Plan Land Use Amendment



RESOLUTION NO. 8553

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS APPROVING SPECIFIC PLAN AMENDMENT NO. 48 TO THE EAST VALLEY CORRIDOR SPECIFIC PLAN (SPECIFIC PLAN NO. 40), TO AMEND THE LAND USE MAP TO REMOVE THREE PARCELS TOTALING APPROXIMATELY 24.4 ACRES FROM THE EAST VALLEY CORRIDOR SPECIFIC PLAN, AND RESCINDING THE LAND USE/ZONING DESIGNATION AS "SPECIAL DEVELOPMENT (EV/SD)" FOR THREE PARCELS LOCATED ON THE NORTH SIDE OF WEST LUGONIA AVENUE, SOUTH SIDE OF PENNSYLVANIA AVENUE, AND WEST SIDE OF KARON STREET (APN: 0167-171-04-0000, 0167-171-05-0000, AND 0167-171-06-0000).

WHEREAS, Redlands Summit, LLC ("Applicant"), has filed an application for Amendment No. 48 to Specific Plan No. 40 (East Valley Corridor Specific Plan) to remove the project site from the East Valley Corridor Specific Plan boundaries as well as rescind the land use district (zoning) designation as Special Development (EV/SD), located on the north side of West Lugonia Avenue, south side of a proposed extension of Pennsylvania Avenue, and west side of Karon Street (APNs: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000) (the "Project"); and

WHEREAS, the Applicant has filed concurrent applications for General Plan Amendment No. 143, Zone Change No. 469, Tentative Parcel Map No. 20469, Tentative Tract Map No. 20490 and No. 20491, and Commission Review & Approval No. 940, 941 and 942 for a residential development located on the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (APN: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000) (the "Project"); and

WHEREAS, the California Legislature has consistently recognized the continuing need for new housing units and affordable housing in California, stating in Government Code Section 65580, that "the availability of housing is of vital statewide importance, and the early attainment of decent housing… is a priority of the highest order" and, further, that, "local… governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community"; and

WHEREAS, the City of Redlands adopted its 6th Cycle Housing Element (the 2021-2029 Housing Element) on October 4, 2022, the City will implement numerous policies and programs as outlined in the 2021-2029 Housing Element, and the City intends to rezone certain parcels identified in the Housing Sites Inventory List to accommodate future high-density housing including housing affordable to lower-income households; and

WHEREAS, the Housing Sites Inventory List contained in the City's 2021-2029 Housing Element includes two parcels (APNs 0167-171-04-0000 and 0167-171-05-0000) within the proposed project site that are to be rezoned for future housing projects; and

WHEREAS, the proposed Project is consistent with the 2021-2029 Housing Element, and approval of Specific Plan Amendment No. 48 to the East Valley Corridor Specific Plan is necessary to achieve consistency with the goals of the new 2021-2029 Housing Element as well as the pending rezoning program contained therein; and

WHEREAS, at the public hearing on January 23, 2024, the Planning Commission determined that the Specific Plan Amendment would be in conformity with the 2035 General Plan, and adopted Resolution No. 1651 recommending approval for Amendment No. 48 to the East Valley Corridor Specific Plan (Specific Plan No. 40); and

WHEREAS, the proposed project is subject to the California Environmental Quality Act (CEQA) and a Mitigated Negative Declaration was prepared and adopted for the proposed project pursuant to CEQA Guidelines Section 15074; and

WHEREAS, on or about February 23, 2024, notice of the City Council's public hearing for Specific Plan Amendment No. 48 was published in the Redlands Daily Facts by the City Clerk; and

WHEREAS, on March 5, 2024, the City Council held a public hearing and considered the staff written and oral reports, the recommendation of the Planning Commission, the testimony and written evidence submitted by and on behalf of the applicant, and testimony by members of the public; and

WHEREAS, following the public hearing on March 5, 2024, the City Council determined that approval of the proposal is in the best interests of the public health, safety, and general welfare.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. General Plan Conformity. The proposed Specific Plan Amendment No. 48 to remove the Project site from the boundaries of the East Valley Corridor Specific Plan will conform with the Redlands 2035 General Plan (as amended). Specific Plan Amendment No. 48 is consistent with the City's 2021-2029 Housing Element that plans for the development of a total of 3,516 new dwelling units (the City's allocation of the Regional Housing Needs Assessment) including very low- and low-income households. The proposed project will develop a total of 541 dwelling units, including 28 very low-income affordable housing units within the project, on two parcels that are currently identified in the 2021-2029 Housing Element as future housing sites. The proposed project is consistent with numerous General Plan policies and actions, and the project will not otherwise result in any inconsistencies within the 2035 General Plan.

Section 2. Approval of Specific Plan Amendment No. 48 to the East Valley Corridor Specific Plan. Specific Plan Amendment No. 48 to the East Valley Corridor Specific Plan (Specific Plan No. 40) is hereby approved. Specific Plan Amendment No. 48 shall amend the East Valley Corridor Specific Plan's land use map to remove three parcels (APNs 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000) from the East Valley Corridor Specific Plan, and rescind the land use/zoning designation as "Special Development (EV/SD)" as more particularly shown in "Exhibit "A" attached hereto.

Section 3. Effective Date. This Resolution shall become effective concurrent with the effective date of Ordinance No. 2960 (Zone Change No. 469) adopted by the City Council.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2024.

_____
Eddie Tejeda, Mayor

ATTEST:

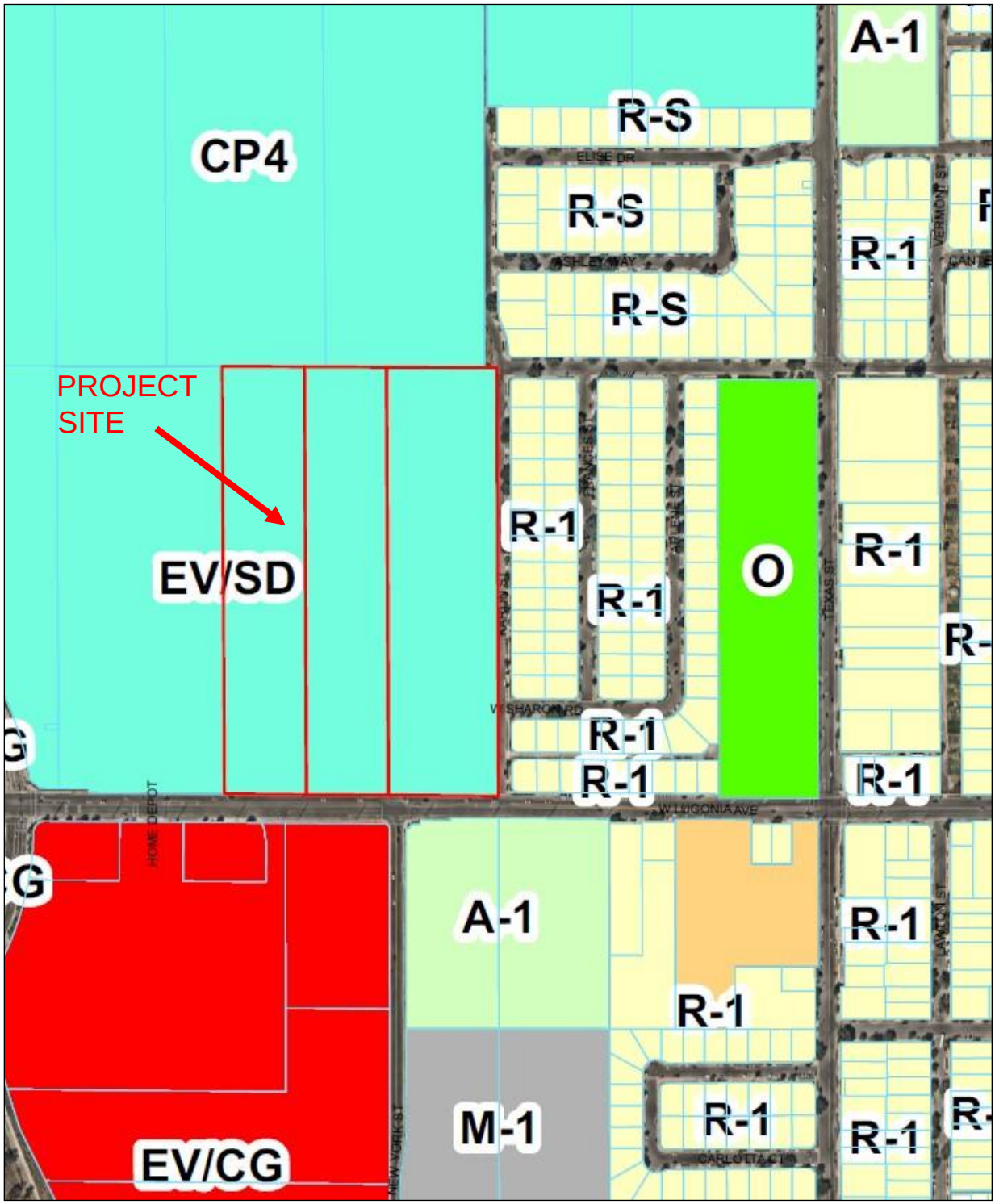
_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

EXHIBIT A
EAST VALLEY CORRIDOR SPECIFIC PLAN
AMENDMENT NO. 48 AREA



I:\cmo\Resolutions\8553 Specific Plan Amendment Lugonia Village.docx-ms

ORDINANCE NO. 2960

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF REDLANDS AMENDING TITLE 18 (ZONING REGULATIONS) OF THE REDLANDS MUNICIPAL CODE BY REVISING THE ZONING MAP (ZONE CHANGE NO. 469) TO CHANGE THE ZONING DESIGNATION OF 24.4 GROSS ACRES TO R-3, HIGH DENSITY RESIDENTIAL DISTRICT (FOR 18.89 GROSS ACRES) AND TO R-1, SINGLE FAMILY RESIDENTIAL DISTRICT (FOR 5.51 GROSS ACRES) LOCATED ON THE NORTH SIDE OF WEST LUGONIA AVENUE, SOUTH SIDE OF PENNSYLVANIA AVENUE, AND WEST SIDE OF KARON STREET (APN: 0167-171-04-0000, 0167-171-05-0000, AND 0167-171-06-0000).

WHEREAS, Redlands Summit, LLC ("Applicant"), has filed an application for Zone Change No. 469 to change the zoning designations of three parcels to R-3, Multiple Family Residential for a total of approximately 24.4 gross acres (APNs: 0167-171-05-0000, 0167-171-06-0000, and portion of 0167-171-04-0000), and to R-1, Single Family Residential for a total of approximately 5.51 gross acres (portion of APN 0167-171-04-0000), as shown on Exhibit "A" attached hereto; and

WHEREAS, the Applicant has filed concurrent applications for General Plan Amendment No. 143, Amendment No. 48 to Specific Plan No. 40 (East Valley Corridor Specific Plan), Tentative Parcel Map No. 20469, Tentative Tract Map No. 20490 and No. 20491, and Commission Review & Approval No. 940, 941 and 942 for a residential development located on the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (APN: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000) (the "Project"); and

WHEREAS, the California Legislature has consistently recognized the continuing need for new housing units and affordable housing in California, stating in Government Code Section 65580, that "the availability of housing is of vital statewide importance, and the early attainment of decent housing… is a priority of the highest order" and, further, that, "local… governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community"; and

WHEREAS, the City of Redlands adopted its 6th Cycle Housing Element (the 2021-2029 Housing Element) on October 4, 2022, the City will implement numerous policies and programs as outlined in the 2021-2029 Housing Element, and the City intends to rezone certain parcels identified in the Housing Sites Inventory List to accommodate future high-density housing including housing affordable to lower-income households; and

WHEREAS, the Housing Sites Inventory List contained in the City's 2021-2029 Housing Element includes two parcels (APNs 0167-171-04-0000 and 0167-171-05-0000) within the proposed project site that are to be rezoned for future housing projects; and

WHEREAS, the proposed Project is consistent with the 2021-2029 Housing Element, and approval of Zone Change No. 469 is necessary to achieve consistency with the goals of the new 2021-2029 Housing Element as well as the pending rezoning program contained therein; and

WHEREAS, on January 23, 2024, the Planning Commission held a public hearing and considered the staff report, oral report, the testimony and the written evidence submitted by staff; and

WHEREAS, on January 23, 2024, the Planning Commission held a public hearing and considered the application materials, the testimony, and the written evidence submitted by the applicant and by members of the public; and

WHEREAS, following the public hearing on January 23, 2024, the Planning Commission determined that the proposed change to the City's Zone Map for the subject properties would be in conformity with the proposed General Plan land use designation (upon approval of the proposed General Plan Amendment) for the subject properties; and

WHEREAS, on January 23, 2024, the Planning Commission recommended to the City Council that the proposed Zone Change be approved; and

WHEREAS, the proposed project is subject to the California Environmental Quality Act (CEQA) and a Mitigated Negative Declaration was prepared and adopted for the proposed project pursuant to CEQA Guidelines Section 15074; and

WHEREAS, on or about February 23, 2024, notice of the City Council's public hearing for the proposed project was published in the Redlands Daily Facts by the City Clerk; and

WHEREAS, on March 5, 2024, the City Council held a public hearing and considered the staff written and oral reports, the recommendation of the Planning Commission, the testimony and written evidence submitted by and on behalf of the applicant, and testimony by members of the public; and

WHEREAS, following the public hearing on March 5, 2024, the City Council determined that approval of the proposal is in the best interests of the public health, safety, and general welfare.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. General Plan Consistency. The City Council of the City of Redlands finds that Zone Change No. 469 will be consistent with the 2035 General Plan (as amended). Zone Change No. 469 is consistent with the City's 2021-2029 Housing Element that plans for the development of a total of 3,516 new dwelling units (the City's allocation of the Regional Housing Needs Assessment) including very low- and low-income households. The proposed project will develop a total of 541 dwelling units, including 28 very low-income affordable housing units within the project, on two parcels that are currently identified in the 2021-2029 Housing Element as future housing sites. The proposed project is consistent with numerous General Plan policies and actions, and the project will not otherwise result in any inconsistencies within the 2035 General Plan.

Section 2. Approval. The Zone Change of 24.4 gross acres from Special Development (EV/SD) District of the East Valley Corridor Specific Plan to 18.89 gross acres of High Density Residential (R-3) District and 5.51 gross acres to Single Family Residential (R-1) District located on

the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (APNs 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000), as more particularly shown on the map attached hereto as Exhibit "A," is hereby approved.

Section 3. Effective Date. The Mayor shall sign this ordinance and the City Clerk shall certify to the adoption of this ordinance and shall cause it, or a summary of it, to be published once in a newspaper of general circulation within the City, and thereafter, this ordinance shall take effect in accordance with law.

_____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, hereby certify that the foregoing Ordinance was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024.

AYES:
NOES:
ABSENT:
ABSTAINED:

_____
Jeanne Donaldson, City Clerk

EXHIBIT A-1
ZONE CHANGE NO. 469 AREA
(EXISTING ZONING DISTRICTS)

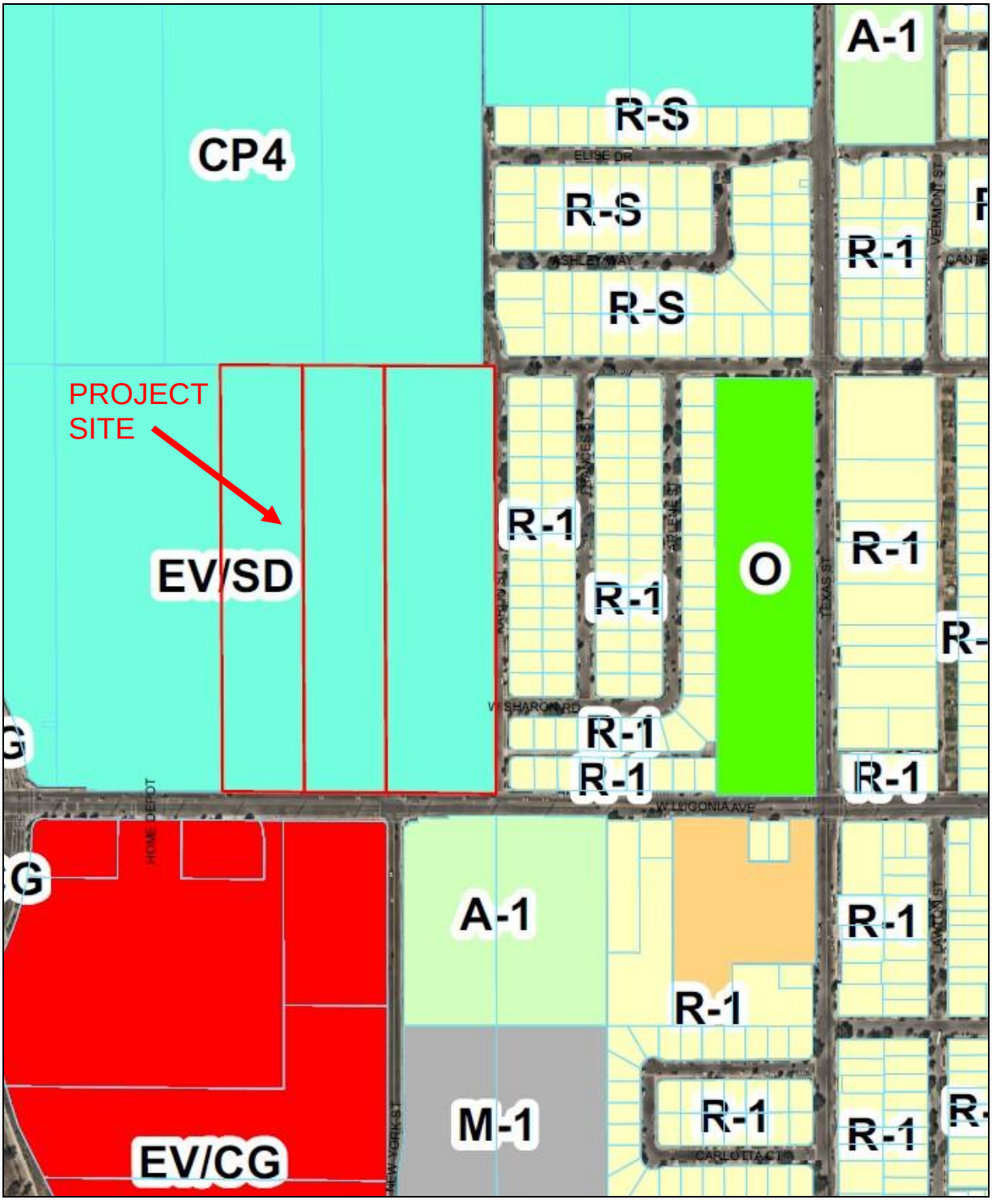
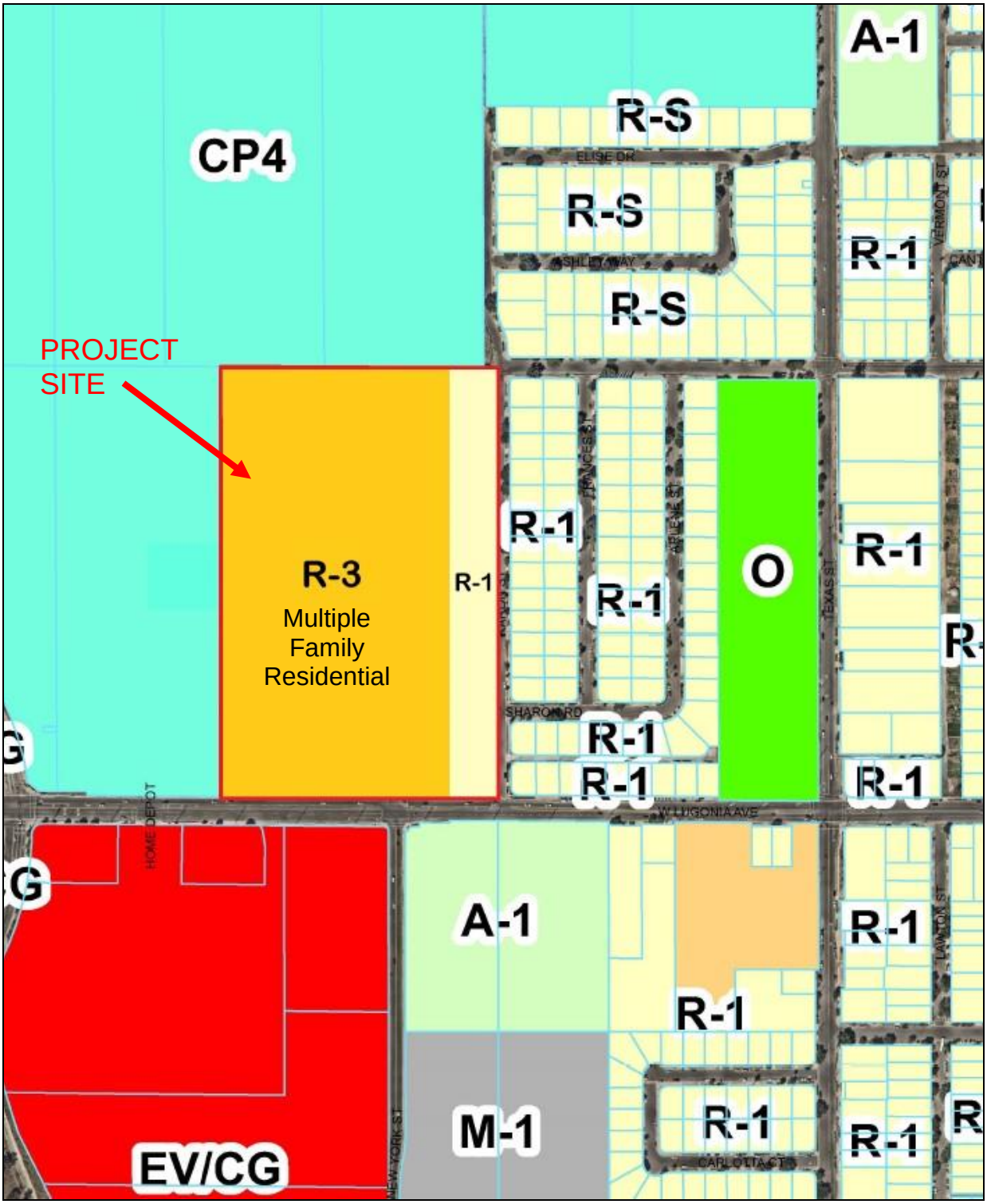


EXHIBIT A-2
ZONE CHANGE NO. 469 AREA
(PROPOSED ZONE CHANGE WITH R.M.C. TITLE 18 ZONING)



RESOLUTION NO. 8554

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS APPROVING TENTATIVE PARCEL MAP NO. 20469 AND COMMISSION REVIEW & APPROVAL NO. 941 FOR THE SUBDIVISION OF 24.4 ACRES INTO THREE PARCELS FOR DEVELOPMENT PURPOSES AND THE CONSTRUCTION OF 451 APARTMENT UNITS, FOR THE PROPOSED LUGONIA VILLAGE RESIDENTIAL PROJECT, LOCATED ON THE NORTH SIDE OF WEST LUGONIA AVENUE, SOUTH SIDE OF A PROPOSED EXTENSION OF PENNSYLVANIA AVENUE, AND WEST SIDE OF KARON STREET.

WHEREAS, Redlands Summit, LLC ("Applicant"), has filed an application for Tentative Parcel Map No. 20469 to subdivide the entire 24.4 acre project site into three parcels (Parcel 1 with 4.75 net acres, Parcel 2 with 3.38 net acres, and Parcel 3 with 14.48 net acres) for development purposes located on the north side of Lugonia Avenue, south side of a proposed extension of Pennsylvania Avenue, and west side of Karon Street (APNs: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000); and

WHEREAS, the Applicant has submitted an application for Commission Review & Approval No. 941 for the construction of a 451-unit multi-family apartment complex on Parcel 3 of Tentative Parcel Map No. 20469, fronting on Lugonia Avenue and comprised of studio, one-bedroom, and two-bedroom floor dwelling units, including onsite parking and recreation areas; and

WHEREAS, the Applicant filed the applications concurrently with General Plan Amendment No. 143, Amendment No. 48 to Specific Plan No. 40, Zone Change No. 469, and a request for a Density Bonus Agreement; and

WHEREAS, the above-referenced development and legislative applications filed with the City of Redlands are referred to hereinafter as the "Project" and "Project Entitlements"; and

WHEREAS, the Applicant has submitted an Inclusionary Housing Plan in accordance with Redlands Municipal Code Chapter 18.230 (Inclusionary Housing) and proposes to fulfill the inclusionary housing requirements by providing twenty-eight (28) very low-income affordable housing units within the project; and

WHEREAS, the Project is subject to the California Environmental Quality Act (CEQA), the City has prepared an Initial Study for the Project in accordance with the State CEQA Guidelines, and adopted a Mitigated Negative Declaration for the project in accordance with CEQA Guidelines Section 15074; and

WHEREAS, on January 23, 2024, the Planning Commission held a public hearing and considered the staff report, oral report, the testimony, and the written evidence submitted by and on behalf of the applicant and by members of the public; and

WHEREAS, on January 23, 2024, the Planning Commission recommended approval of the Project to the City Council; and

WHEREAS, on or about February 23, 2024, notice of the City Council's public hearing for the Project was published in the Redlands Daily Facts by the City Clerk; and

WHEREAS, on March 5, 2024, the City Council held a public hearing and considered the staff written and oral reports, the recommendation of the Planning Commission, the testimony and written evidence submitted by and on behalf of the applicant, and testimony by members of the public; and

WHEREAS, following the public hearing on March 5, 2024, the City Council determined that approval of the proposal is in the best interests of the public health, safety, and general welfare.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

SECTION 1. CALIFORNIA ENVIRONMENTAL QUALITY ACT. The proposed Project is subject to the California Environmental Quality Act (CEQA), and the City Council has adopted Resolution No.8851 certifying and adopting the Mitigated Negative Declaration and related Mitigation Monitoring/Reporting Program for the project.

SECTION 2. FINDINGS FOR APPROVAL OF TENTATIVE PARCEL MAP NO. 20469. The City Council of the City of Redlands hereby approves Tentative Parcel Map No. 20469 for the Project subject to the Conditions of Approval attached hereto as Exhibits "A" and "B-1," and based upon the following findings:

1. *The proposed map is consistent with the General Plan or any applicable specific plan, or other applicable provisions of the Redlands Municipal Code.*

The proposed map will be consistent with the Redlands General Plan and the Redlands Municipal Code. The proposed project is designated on the General Plan land use map as Commercial and Low Density Residential, and has existing zoning as Special Development (EV/SD) within the East Valley Corridor Specific Plan. The applicant has filed a General Plan Amendment, Specific Plan Amendment, and Zone Change which would change the General Plan land use designation for the high-density residential portions of the project to High Density Residential, as well as change the zoning designations for the high-density residential portions of the project to Multiple Family Residential (R-3) and the single-family portions of the project to Single Family Residential (R-1). Approval of these applications will allow the proposed densities with the accompanying Density Bonus

pursuant to State Density Bonus Law. The application is consistent with General Plan policies 4-P.8, 4-P.9, 4-P.16, 4-A.7, and 4-A.8 of the Livable Community chapter. The applicable zoning designations are the Multiple Family Residential (R-3) and Single Family Residential (R-1) zoning districts, and with the Density Bonus the proposed densities will be consistent with the General Plan land use designations, as amended. The proposed project meets the applicable development standards for the subject zoning districts, with the exception of those concessions and waivers identified in the Density Bonus Agreement in accordance with State Density Bonus Law.

2. The site is physically suitable for the proposed type of development.

The project site is physically suitable for the type of development. The existing site has a relatively flat topography within the development area, and is large enough to subdivide the site into three lots and comply with the minimum lot sizes and dimensions required of the applicable zoning districts. The site has three street frontages where vehicular access, utility services, and dispersion of project traffic can all be provided. All on-site and off-site improvements proposed as part of the project's design will meet applicable City standards and provide a safe and efficient environment for the residents as well as surrounding neighborhoods.

3. The site is physically suitable for the density of the development.

The site is physically suitable for the density of the development. The project site has been identified in the City's adopted 2021-2029 Housing Element as a site suitable for higher density residential development. The proposed project is designated on the General Plan land use map as Commercial and Low Density Residential and has existing zoning as Special Development (EV/SD) District. The applicant has filed a General Plan Amendment, Specific Plan Amendment, and Zone Change which would change the General Plan land use designation for the high-density residential portions of the project to High Density Residential, change the zoning district for the high-density residential portions of the project to Multiple Family Residential (R-3) and the single-family portions of the project to Single Family Residential (R-1), which would allow the proposed densities with the accompanying Density Bonus pursuant to State Density Bonus Law. The applicable zoning designations are the Multiple Family Residential (R-3) and Single Family Residential (R-1) zoning district. With the proposed Density Bonus, the proposed densities would be consistent with the General Plan land use designations, as amended. The proposed project meets the applicable development standards for the zoning districts, with the exception of those concessions and waivers identified in the Density Bonus Agreement in accordance with State Density Bonus Law. The size and the shape of the parcel is suitable to be subdivided into three lots for development purposes while ensuring those lots have adequate space for vehicular access, landscape and open space areas, and water quality management facilities.

4. *The design of the subdivision or the proposed improvements is not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.*

The design of the subdivision and proposed improvements is not likely to cause substantial environmental damage or injure fish or wildlife or their habitat. The developable portions of the site do not contain any biological resources including fish or wildlife, and based on the Initial Study that has been prepared for the project, there are no environmental factors that cannot be mitigated to a level that is less than significant.

5. *The design of the subdivision or type of improvements is not likely to cause serious public health problems.*

The design of the subdivision or the type of improvements are not likely to cause serious public health problems. The proposed project would accommodate a multifamily residential development, and is not likely to cause any serious public health problems as the project is designed with improvements that meets all City and State building and fire codes, no offensive emissions or odors will be associated with the development, and the ambient noise will not affect residential properties because all noise will be mitigated to a level of less than significant as shown in the Initial Study.

6. *The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision.*

The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision. The project will improve pedestrian and vehicular access in the immediate vicinity by allowing for the further subdivision and development of the lost, which will in turn allow for the improvement and construction of public facilities as well as interior drive aisles within each development. In addition, the project is responsible for installing or repairing associated street improvements such as curb and gutter adjacent to the project, consistent with City requirements.

7. *That pursuant to Section 66474.4 of the Subdivision Map Act, the land is not subject to a contract entered into pursuant to the California Land Conservation Act of 1965 (commencing with section 51200 of the Government Code) and that the resulting parcels following a subdivision of the land would be too small to sustain their agricultural use.*

The subject property is not under a Williamson Act Contract pursuant to the California Land Conservation Act of 1965, and will not be detrimental or otherwise affect lands in agricultural use.

SECTION 3. FINDINGS FOR COMMISSION REVIEW AND APPROVAL NO. 941. The City Council of the City of Redlands hereby approves Commission Review & Approval No. 941 subject to the Conditions of Approval attached hereto as Exhibits "A" and "B-2," and based upon the following findings:

1. *The site for the intended use is adequate in size and shape to accommodate the use, and all of the required yards, setbacks, walls or fences, landscaping and other features will adjust the use to those existing or permitted future uses of land in the neighborhood.*

The site is adequate in size and shape to accommodate the proposed use. The subject property is 14.48 acres in size and will be developed with a 451-unit apartment community, with onsite parking, landscape, and recreational amenities. The project will provide the necessary onsite and off-site improvements including new roadway, curbs, gutters, and sidewalks, and interior drive aisles. With the Density Bonus, the project site complies with the applicable development standards for the Multiple Family Residential (R-3) District, such as setbacks, height, parking, common and private open space, and landscaping. The proposed use will be compatible with the surrounding uses as it is buffered from lower density neighborhoods to the east by a proposed new single-family development, complete with required walls separating the zoning districts, and is surrounded on all other sides by high density residential and/or commercial areas which allow for more intense uses of land. The proposed project will be consistent with the anticipated future residential development on parcels with residential land use designations in the immediate vicinity.

2. *The site for the proposed use relates to streets and highways which are properly designed and improved to carry the type and quantity of traffic generated or to be generated by the proposed use.*

The site is designed to carry the type and quantity of traffic generated by the proposed use. The site will provide new improved access to the site by improving West Lugonia Avenue, as well as modifying the existing signalized intersection at New York Street and West Lugonia Avenue to safely accommodate vehicular and pedestrian access to the project. New roadway, curb, gutter, and sidewalk along the project's frontage is incorporated into the project. As analyzed in the traffic study for the project, these improvements are designed to carry the volume of residential traffic anticipated to be generated by the project and implement the project's portion of the roadways designated for the area by the General Plan.

3. *The conditions set forth in the approval and those shown on the approved site plan are deemed necessary to protect the public health, safety and general welfare.*

The conditions of approval for the project will protect the public health, safety, and general welfare. The project site will be developed in accordance with standard engineering design requirements as well as standard building code and fire code requirements. The project has been conditioned to comply with the applicable provisions of the Redlands Municipal Code.

SECTION 4. EFFECTIVE DATE. This Resolution shall become effective concurrent with the effective date of Ordinance No. 2960 (Zone Change No. 469) adopted by the City Council.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2024.

_____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

EXHIBIT A
DEVELOPMENT SERVICES DEPARTMENT
CONDITIONS OF APPROVAL
(Tentative Parcel Map No. 20469 and Commission Review & Approval No. 941)

Planning Division

1. This permit/approval is for Tentative Parcel Map No. 20469 and Commission Review & Approval No. 941, for the "Lugonia Village Residential Project" generally described as the following:
    a. A total of four hundred and fifty-one (451) unit multifamily apartment development, consisting of eleven (11) three-story residential buildings, and two recreation/amenity buildings;
    b. Common recreational open space (privately-owned with private access) both indoors and outdoors for use by the project's residents and residential guests;
    c. Related improvements including frontage and street improvements in accordance with the civil engineering plans.

2. This permit/approval shall expire two (2) years from the date of project approval (will expire on January 23, 2026), unless construction has commenced pursuant to a building or engineering permit(s), or a time extension is granted in accordance with the Redlands Municipal Code (RMC Section 18.12.090 for Commission Review & Approval; and RMC Sections 17.07.110 and 17.07.120 for Subdivision Regulations).

3. Pursuant to Government Code Section 66020(d), certain fees, dedications, reservations or exactions imposed by the City as a condition of approval of this project are subject to a statutory ninety (90) day protest period. Please be advised that the ninety (90) day protest period for those fees, dedications, reservations and exactions which are subject to Government Code Section 66020(a) has commenced to run on the date this project was approved by the City.

4. The applicant for this permit, and its successors and assigns, shall defend, indemnify and hold harmless the City of Redlands, and its elected officials, officers, agents and employees, from and against any and all claims, actions, and proceedings to attack, set aside, void or annul the approval of this permit by the City, or brought against the City due to acts or omissions in any way connected to the applicant's project that is the subject of this permit. This indemnification shall include, but not be limited to, damages, fees, costs, liabilities, and expenses incurred in such actions or proceedings, including damages for the injury to property or persons, including death of a person, and any award of attorneys' fees. In the event any such action is commenced to attack, set aside, void or annul all, or any, provisions of this permit, or is commenced for any other reason against the City for acts or omissions relating to the applicant's project, within fourteen (14) City business days of the same, the applicant shall file with the City a performance bond or irrevocable letter of credit (together, the "Security") in a form satisfactory to the City and in the amount of Three Hundred Thousand Dollars ($300,000), to ensure applicant's performance of its defense

and indemnity obligations under this condition. The failure of the applicant to provide the Security shall be deemed an express acknowledgement and agreement by the applicant that the City shall have the authority and right, without objection by the applicant, to revoke all entitlements granted for the project pursuant to this permit. The City shall have no liability to the applicant for the exercise of City's right to revoke this permit.

5. By signing and/or using this permit, the permittee acknowledges all of the conditions imposed and accepts this permit subject to those conditions and with full awareness of the applicable provisions of the Redlands Municipal Code including Title 15 (Buildings and Construction), Title 16 (General Plan), Title 17 (Subdivision Regulations), and Title 18 (Zoning Regulations). Failure of the permittee to sign these conditions does not affect their enforceability by the City or other responsible entity. These conditions are binding upon all future property owners and occupants of the subject property.

6. This permit/approval is granted for the project plans dated July 5, 2023 ("the plans") on file with the Development Services Department.

7. Prior to the issuance of building permits for the project, an Affordable Housing Agreement and Density Bonus Agreement, in a form approved by the City, shall be recorded against the Inclusionary Units or the Residential Development in its entirety, as deemed appropriate by the City Manager in consultation with the City Attorney. The Affordable Housing and Density Bonus Agreement(s) shall ensure that the applicant and/or developer develops the required Inclusionary Housing Units and satisfies all other terms of the Inclusionary Housing Plan, State Density Bonus Law, and the Redlands Municipal Code.

8. No final inspection or Certificate of Occupancy shall be granted until all conditions of approval have been satisfied.

9. The issuance of any permits shall comply with all applicable provisions of the Redlands Municipal Code.

10. All plans submitted to the City shall reflect all Planning Commission and/or City Council approvals and any other changes required by the Commission, Council and/or staff. This condition applies to site plans, landscape plans, elevations, grading, and all other illustrations, text, or plans submitted to the City in connection with the project.

    Added by Planning Commission 1/23/2024:

    a. The applicant shall construct a Public Art installation, in coordination with the Public Arts Commission, with a value of at least $20,000 at the signalized main entry at New York Street and West Lugonia Avenue. This shall be shown on the building plans for the apartments prior to building permit issuance and constructed prior to certificate of occupancy for the final building.

    b. Plans submitted to the Municipal Utilities & Engineering Department and/or the Land Use Engineering Division shall include signal modifications for Opticom

systems to be installed at the New York Street/Lugonia Avenue intersection, and the Home Depot/Lugonia Avenue intersection.

11. The Development Services Director is authorized to approve minor modifications to the approval project plans or any of the conditions of approval if such modifications shall achieve substantially the same results as would strict compliance with said plans and conditions.

12. No Certificate of Occupancy shall be granted for a building or phase, or building permit shall receive final approval and signature, until all applicable Conditions of Approval have been satisfied for that building or phase.

13. The final maps shall substantially conform to the tentative maps as approved by the Planning Commission.

14. A copy of the approved Conditions of Approval shall be included on the cover page of the construction plans submitted to the Building Division.

15. The applicant shall comply with all applicable federal, state, and local laws. Violations or convictions of any of those laws in connection with the use may be cause for revocation of this permit.

16. All off-site and on-site utilities shall be placed underground. Prior to approval of the final map the applicant shall submit plans to be approved by the Municipal Utilities & Engineering Director and the Development Services Director, that detail undergrounding of all utilities for the project.

17. Transformer cabinets and gas meters shall not be located within required setbacks and/or adjacent to public streets, and shall be screened from public view either by architectural treatment or with landscaping. Multiple electrical meters and panels shall be fully enclosed and incorporated into the overall architectural design of the building(s). Backflow preventers shall be enclosed with landscaping that will provide complete screening upon maturity. The location and method of enclosure or screening of this equipment shall be shown on the construction plans and landscape plans prior to building permit issuance. Location of said equipment shall be coordinated with appropriate utility company (i.e., Southern California Gas Company or Southern California Edison Company). The applicant shall submit plans showing details of screening subject to review and approval by the Development Services Director, prior to issuance of building permits

18. Plans submitted for plan check shall include an exterior lighting plan, including fixture and pole designs, for review and approval by the Development Services Director or designee. Prior to building permit issuance, a lighting and photometric plan shall be submitted demonstrating that adequate lighting ranges will be provided throughout the development without creating light spillover, light pollution, or conflicts with surrounding factors such as tree locations, off-site or adjacent lighting.

19. Prior to issuance of building permits, Developer shall demonstrate that light poles will not conflict with tree locations. Developer shall submit a plan showing both the lighting and landscape on the same sheet. Fixtures on exterior light poles shall direct lighting downward (e.g., contain a flat lens and/or have shielding that directs light downward and contains glare).

20. Prior to the issuance of building permits, the applicant shall submit plans detailing that roof screening is of adequate height to screen any roof-top equipment from public view on all sides, subject to review and approval by the Development Services Director. Screening of air conditioning units and other equipment on the buildings shall be incorporated into or compatible with the architectural design of the buildings. All equipment shall be screened from public view of adjacent roadways and freeways. Plumbing vents, ducts and other appurtenances protruding from the roof of structures shall be placed so that they will not be visible from the front of the property or other major public vantage points. Developer shall include a note on the construction plumbing drawings of exterior elevations to indicate to contractors that roof features shall be grouped and located in the described manner. Roof vents shall be shown on construction drawings and painted to match roof material color.

21. Any gutters, downspouts, pipes, and other drainage appurtenances shall be designed and shall be placed (e.g., internal to the building or inside the exterior walls) so that they will not be visible from the front of the property (i.e., from public right-of-way) or other major public vantage points.

22. Utility meters shall be fully screened and incorporated into the overall architectural design of the building (e.g., interior room, cabinet with wing wall, or equivalent complete screening). Any enclosures or screening shall be architecturally treated to match the exterior of the attached structure.

23. If any bollards or similar devices are used along street frontages or interior drive aisles, then the bollards or the equivalent shall be decorative in nature and subject to review and approval by the Development Services Director or designee in Plan Check prior to permit issuance. If any steel bollards or pour-in-place bollards are installed, they shall only be installed for protecting utility devices (e.g., transformers above-ground) and shall be painted a dark color (e.g., dark green, brown, or black) to blend with surrounding landscape screening.

24. Telecommunications and television equipment or satellite dishes shall not be located on the exterior of any building (including but not limited to balconies, patios, exterior railings, rooflines, etc.). Dwelling units shall be internally wired for all available utility and telecommunications services, with service devices, panels, or meters located within a centralized equipment room. The equipment room(s) in each building shall be fully enclosed and incorporated into the overall architectural design of the building(s). Any

satellite dishes/receivers shall only be located on the roof and shall be completely screened from public view on all sides.

25. Where any public sidewalks are adjacent to slopes or parkways with slopes (e.g., downslopes), a 6" concrete curb may be required to be constructed with the sidewalk. Hand railings or guard rails should be avoided, if feasible. Prior to permit issuance, Developer shall identify any areas with slopes and parkways on the civil plans and identify construction of a 6" concrete curb as needed.

26. Prior to issuance of any building or engineering permit for any building or phase of the project, the Developer shall prepare and submit a Construction Parking Management Plan for all contractors, workers, and deliveries related to the project site. The Construction Parking Management Plan shall identify areas of the project site, surrounding private properties (with property owner's authorization), and surrounding public streets that construction personnel may utilize. Deliveries of construction materials, equipment, trailers, vehicles, etc., shall be performed on the project site to the extent practicable, and avoid the use of public streets and rights-of-way if possible. The Developer and/or on-site primary general contractor (superintendent) shall have responsibility for monitoring and enforcing the approved parking management plan. The plan shall be subject to review and approval by the City Planner or designee, and may be modified by the City after approval to mitigate any unanticipated impacts or public nuisance conditions.

27. Prior to any use of any public street or right-of-way for construction-related activities, the Developer shall submit and receive approval for a Traffic Control Plan. Developer shall be responsible for repairing, replacing, or financially compensating any damages to public rights-of-way (including but not limited to paving, sidewalks, driveways, curbs and gutters, storm drain facilities, parkway landscape, street trees, public utilities, etc.) to the satisfaction of the Director(s) of the Municipal Utilities & Engineering Department and/or the Facilities & Community Services Department, or their designee(s), as applicable.

28. Prior to issuance of a Certificate of Occupancy for a building or phase, Developer shall remove all construction materials and vehicles from the subject property or phase.

29. Developer shall arrange for materials collection during construction, demolition, and occupancy with the City's Solid Waste Division, or Developer shall arrange for self-hauling to an authorized facility.

30. Prior to placing or constructing any signs on the project property, Developer shall obtain a sign permit from the City. Sign locations and illumination are subject to review and approval by the Planning Division under separate permit.

31. Entryways to the community shall incorporate decorative paving. Decorative paving elements shall not be located within public rights-of-way.

32. Access gates to parking areas shall be subject to review and approval by the Planning Division during plan check.

33. Bus Pad and Boarding Area: Prior to issuance of any building or engineering (site improvement) permits, the Developer shall coordinate, with Omnitrans, the design and construction of a sidewalk boarding area and bus pad east of the New York Street traffic signal and Karon Street, and show all bus-related improvements on the plans submitted to the Building Division, in accordance with RMC Section 18.224.020(F).

34. Bicycle Facilities: Bicycle Parking Facilities shall be provided in accordance with the approved plans. The Developer shall install bicycle racks or secured lockers at a rate of one per thirty (30) parking spaces with a minimum of a three (3) space bicycle rack in accordance with RMC Section 18.224.020(A). Plans submitted to Plan Check shall include information and specifications to verify this requirement has been met.

35. Telecommuting Facilities: A telecommuting facility shall be provided within the apartment community in accordance with RMC Section 18.224.020(G). Plans submitted to Plan Check shall include information and specifications to verify this requirement has been met

36. The total number of parking spaces for the apartments shall be provided in accordance with the approved plans.

37. The applicant shall not make any modifications or changes during construction that are in conflict or contrary to the project's approved site design, or building elevations without first consulting with the Development Services Director or designee.

38. Any graded slopes greater in height than three feet (3') shall be provided with irrigation systems and planted with groundcover, shrubs, and trees as approved by the Development Services Department and Municipal Utilities & Engineering Department, to prevent erosion.

39. Prior to the issuance of a building permit for walls over three feet in height, or open fences over four feet in height within the front yard setback, the developer shall obtain a Minor Exception Permit.

40. Prior to the issuance of a building permit for walls or fences over six feet in height, the developer shall obtain a Minor Exception Permit.

41. Landscape and Irrigation Plans shall be approved prior to the issuance of building permits. Landscape and Irrigation shall be submitted for plan check to the Development Services Department, Building & Safety Division, for distribution to other departments and for review and approval by the Development Services Director. Plans shall be in compliance with the Water Efficient Landscape Ordinance No. 2724 (Also known as Chapter 15.54 of the RMC).

42. All construction activities shall be limited to the hours between 7:00 a.m. to 6:00 p.m., and no construction activities permitted on Sundays and Federal Holidays.

43. The project site shall be kept in a weed and dust free condition throughout all periods of development.

44. All walls facing public areas or existing development must be decorative in nature, using decorative (split-face or slump stone) block and or a textured finish (i.e. stucco).

Subdivision Conditions (Tentative Parcel Map No. 20469):

45. Tentative Parcel Map No. 20469 authorizes the subdivision of a total of approximately 24.4 acres as follows: three separate parcels, 4.75 net acres (Parcel 1), 3.38 net acres (Parcel 2), and 14.48 net acres (Parcel 2) in size, for development purposes located on the north side of Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (APN: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000).

46. This Tentative Parcel Map shall expire two (2) years or 24 months from the date of project approval, unless the Final Map has been recorded. or a time extension is granted in accordance with the Redlands Municipal Code pursuant to RMC Sections 17.07.110 and 17.07.120 (Subdivision Regulations).

47. Any application(s) for an extension of time of the above expiration date shall be filed with the Planning Division not less than 90 days prior to the expiration date and shall comply with Title 17 (Subdivision Regulations) of the Redlands Municipal Code. Upon application by the subdivider prior to the expiration of the approved or conditionally approved tentative map, the tentative map shall be automatically extended in accordance with the Subdivision Map Act.

48. The applicant shall record the subdivision by a Final Parcel Map. The Final Parcel Map(s) shall comply with the Subdivision Map Act and the Redlands Municipal Code (RMC).

49. Any conditions of approval determined by the City to not be completed prior to Final Map approval shall be included within the Subdivision Improvement Agreement entered into by the developer with the City.

The Final Parcel Map(s) shall be in substantial conformance with the Tentative Parcel Map and plans submitted by the applicant and placed on file in the office of the Planning Division.

CEQA Mitigation Measures:

50. Mitigation Measure BIO-1

A pre-construction burrowing owl clearance survey shall be conducted no less than 14 days prior to any vegetation removal or ground-disturbing activities to avoid impacts to burrowing owls and/or occupied burrows. The pre-construction clearance survey shall be conducted by a qualified biologist and in accordance with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). A second clearance survey shall be conducted within 24 hours prior to ground disturbance. Documentation of surveys and findings shall be submitted to the City of Redlands for review and file. If no burrowing owls or occupied burrows are detected, Project activities may begin, and no additional avoidance and minimization measures shall be required.

If an occupied burrow is found outside, but within 500 feet, of the development footprint, the qualified biologist shall establish a "no-disturbance" buffer around the burrow location(s). The size of the "no-disturbance" buffer shall be determined in consultation with the California Department of Fish and Wildlife (CDFW) and be based on the species status (i.e., breeding, non-breeding) and proposed level of disturbance. If an occupied burrow is found within the development footprint and cannot be avoided, a burrowing owl exclusion and mitigation plan shall be prepared and submitted to CDFW for approval prior to initiating Project activities.

51. Mitigation Measure BIO-2

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey shall be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season. Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered "take" and is potentially punishable by fines and/or imprisonment.

If Project-related activities are to be initiated during the nesting season (January 1 to August 31), a pre-construction nesting bird clearance survey shall be conducted by a qualified biologist no more than three (3) days prior to the start of any vegetation removal or ground disturbing activities. The qualified biologist shall survey all suitable nesting habitat within the Project impact area, and areas within a biologically defensible buffer zone surrounding the Project impact area. If no active bird nests are detected during the clearance survey, Project activities may begin, and no additional avoidance and minimization measures shall be required. If an active bird nest is found, the species shall be identified, and a "no-disturbance" buffer shall be established around the active nest. The size of the "no-disturbance" buffer shall be increased or decreased based on the judgement of the qualified biologist and level of activity and sensitivity of the species. The qualified biologist shall periodically monitor any active bird nests to determine if Project-related activities occurring outside the "no-disturbance" buffer disturb the birds and if the buffer should be increased. Once the young have fledged and left the nest, or the nest otherwise becomes

inactive under natural conditions, Project activities within the "no-disturbance" buffer may occur following an additional survey by the qualified biologist to search for any new bird nests in the restricted area.

52. Mitigation Measure CUL-1

Prior to the issuance of a grading permit, the Applicant shall provide the Director of the City of Redlands Department of Development Services, or designee, with evidence that it has retained the services of a qualified archaeologist that meets the Secretary of the Interior standards on an on-call basis. Archaeological monitoring shall occur during all excavation activities down to a depth of 3 feet within 100 feet of the former residence location. In the event that cultural resources are discovered during Project activities, all work in the immediate vicinity of the find (within a 100-foot buffer) shall cease and the project archaeologist shall assess the find and determine appropriate treatment. Work on the other portions of the Project outside of the buffered area may continue during this assessment period.

53. Mitigation Measure CUL-2

If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the qualified archaeologist shall develop a Monitoring and Treatment Plan for the remainder of the Project site. The Monitoring and Treatment Plan shall be developed in coordination with the Applicant and the City. The Applicant shall secure a monitoring agreement with the archaeologist prior to the recommencement of work, and the archaeologist shall monitor during the remainder of the ground disturbance activities on the Project site and implement the Plan accordingly.

54. Mitigation Measure GEO-1

Prior to commencement of any grading activity on the Project site, the Applicant shall retain a qualified paleontologist, subject to the review and approval of the Director of the City of Redlands Department of Development Services, Planning Division, or designee. The qualified paleontologist shall be present at the pre-grade conference and shall establish procedures for paleontological resource surveillance and procedures for temporarily halting and redirecting work to permit sampling and identification and evaluation of fossils. If the resources are deemed to be significant, the paleontologist shall determine appropriate actions, in cooperation with the Applicant, which ensure proper exploration and/or salvage. Full-time monitoring and salvage efforts will be necessary whenever previously undisturbed sediments are being disturbed (8 hours per day during grading or trenching activities). Once the earth moving is 50 percent completed, monitoring may be reduced if no fossils are being recovered. The paleontologist shall be empowered to temporarily divert or direct grading operations to facilitate assessment and salvaging of exposed fossils.

Collection and processing of matrix samples through fine screens will be necessary to salvage any micro-vertebrate remains.

In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP).

55. Mitigation Measure TRA-1:

Prior to submission of building permits, the Applicant shall coordinate with the City's Engineering Division to determine the anticipated cost of evaluating and optimizing signal timing parameters at the intersection of Tennessee Street and West Lugonia Avenue. The Applicant shall submit payment to the Engineering Division covering the determined cost in full, consistent with County guidelines. The Building and Safety Division shall confirm the completion of payment prior to issuing building permits. Upon conclusion of Project construction, the Building and Safety Division shall not issue a Certificate of Occupancy to the Applicant until receiving confirmation from the City that signal optimization has been completed.

56. Mitigation Measure TCR-1:

Native American Treatment Agreement. Prior to the issuance of grading permits, the Applicant shall enter into a Tribal Monitoring Agreement with the Consulting Tribe(s) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification.

57. Mitigation Measure TCR-2:

Retention of Archaeologist. Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing

activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist shall conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal Representative. The training session shall focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event.

58. Mitigation Measure TCR-3:

Cultural Resource Management Plan. Prior to any ground-disturbing activities the Project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the Project site. This Plan shall be written in consultation with the Consulting Tribe(s) and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the Project schedule.

59. Mitigation Measure TCR-4:

Pre-Grade Meeting. The retained qualified archeologist and Consulting Tribe(s) representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.

60. Mitigation Measure TCR-5:

On-site Monitoring. During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

61. Mitigation Measure TCR-6:

Inadvertent Discovery of Cultural Resources. In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground-disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and Consulting Tribe(s) of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the Consulting Tribe(s), and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference:

A. Full avoidance.

B. If avoidance is not feasible, Preservation in place.

C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction.

D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)

62. Mitigation Measure TCR-7:

Inadvertent Discovery of Human Remains. The Consulting Tribe(s) requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. No photographs are to be taken except by the coroner, with written approval by the Consulting Tribe(s).

A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e., clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98.

B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5.

C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98

D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial shall not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations shall be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.

63. Mitigation Measure TCR-8:

Final Report. The final report[s] created as a part of the Project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the City and Consulting Tribe(s) for review and comment. After approval of all parties, the final reports shall be submitted to the Eastern Information Center, and the Consulting Tribe(s).

Building Division

64. Building plans submitted for plan check shall consist of complete construction drawings including structural calculations, energy calculations and soils report to Building and Safety for plan review in accordance with the current edition of the California Building and Fire Codes including all local ordinances and standards which are effective at the time of Plan Check Submittal.

65. Disabled access for the site and buildings must be in accordance with the State of California and ADA regulations.

66. San Bernardino County Environmental Health Services approval is required for the swimming pool prior to issuance of the swimming pool building permits.

Facilities and Community Services Department

67. The City maintains a list of acceptable street trees by species, by street name, and by tree district, pursuant to RMC 12.52.050. Street trees for public streets adjacent to the project must be selected from this approved list.

68. Prior to issuance of any buildings permits for any building, the Developer shall prepare and submit a Trash Management Plan. The plan shall provide estimates of trash generation, estimates for the numbers and sizes of containers and facilities, schedule for City services, pertinent instructions for on-site maintenance staff (e.g., bins and containers shall not be placed on public streets and left unattended outdoors for more than two hours before or after trash service pick-up, bins and containers shall not be placed or staged in a manner that obstructs any vehicle travel lanes, etc.), and other necessary information as required by the City. The plan shall be subject to review and approval by the Facilities & Community Services Department and the Development Services Department, and may be modified by the City after approval to mitigate any unanticipated impacts or public nuisance conditions.

    a. Each building and building pad shall be designed to accommodate all necessary refuse storage rooms, bins and containers, hallways, access paths, and other structural elements to be completely screened or enclosed. Refuse and recycling storage rooms and all bins or containers shall be completely screened from view from any streets (when not placed outdoors for scheduled pick-up and hauling).

Fire Department

69. Fuels Management and Weed Abatement:

    a. From the present time until project construction phase, property owner is responsible to maintain compliance with Redlands Municipal Code Chapter 8.40 regarding Weed Abatement and Fuels Management.

    b. Weeds and annual grasses shall be maintained at a 4 inches of growth or less.

    c. Tumbleweeds and similar uncultivated vegetation shall be removed.

70. Gates shall be designed for emergency access, and incorporate Knox Rapid Access System, subject to approval by the Redlands Fire Department.

71. Fire Protection Plan: Prior to the issuance of building permits, a separate Fire Master Plan is required for submittal to the RFD. It shall be a site plan reflecting all the following fire department related items:

    a. Fire hydrant locations, public and private, as well as the associated fire flow compliance.

b. FDC locations.
c. Dimensions from FDC's to hydrants.
d. DCDA locations.
e. Fire sprinkler riser locations and location of system serving.
f. FACP locations.
g. Knox box and Knox switch locations.
h. Gate locations.
i. Fire lane locations, dimensions, lengths, turning radii at corners and circles/cul-de-sacs.
j. Fire lane signage and striping.
k. Property dimensions or accurate scale.
l. Building locations and heights.
m. Building addresses and suite addresses.
n. Ground ladder access to emergency escape openings.

Other City Departments/Divisions:

72. Conditions of Approval from the following City Departments/Divisions are applicable to the project, and are hereby incorporated by reference:

    a. Land Use Engineering Division (Exhibits "B-1" and "B-2")

_____

Brian Desatnik
Development Services Director

EXHIBIT B-1
LAND USE ENGINEERING DIVISION
CONDITIONS OF APPROVAL
(Tentative Parcel Map No. 20469)

[Attached]

EXHIBIT B-2
LAND USE ENGINEERING DIVISION
CONDITIONS OF APPROVAL
(Commission Review & Approval No. 941)

[Attached]

RESOLUTION NO. 8555

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS APPROVING TENTATIVE TRACT MAP NO. 20490 AND COMMISSION REVIEW && APPROVAL NO. 940 FOR THE SUBDIVISION OF 3.47 ACRES INTO 20 LOTS, WITH 18 NUMBERED LOTS FOR SINGLE-FAMILY RESIDENTIAL DEVELOPMENT AND TWO LETTERED LOTS, AND THE CONSTRUCTION OF 18 SINGLE FAMILY HOMES, LOCATED FRONTING ALONG KARON STREET AND NORTH OF LUGONIA AVENUE.

WHEREAS, Redlands Summit, LLC ("Applicant"), has submitted development applications for Tentative Tract Map No. 20490 and Commission Review & Approval No. 940 to subdivide Parcel 2 of Tentative Parcel Map No. 20469 into a total of twenty (20) lots, with eighteen (18) numbered lots for single-family residential development plus two lettered lots for improvements, and the construction of 18 detached single-family homes, on a linear project site fronting along Karon Street; and

WHEREAS, the Applicant filed the applications concurrently with Amendment No. 48 to Specific Plan No. 40, Zone Change No. 469, and request for a Density Bonus Agreement; and

WHEREAS, the above-referenced development and legislative applications filed with the City of Redlands are referred to hereinafter as the "Project" and "Project Entitlements"; and

WHEREAS, the Applicant has submitted an Inclusionary Housing Plan in accordance with Redlands Municipal Code Chapter 18.230 (Inclusionary Housing) and proposes to fulfill the inclusionary housing requirements by providing twenty-eight (28) very low-income affordable housing units within the project; and

WHEREAS, the Project is subject to the California Environmental Quality Act (CEQA), the City has prepared an Initial Study for the Project in accordance with the State CEQA Guidelines, and adopted a Mitigated Negative Declaration for the project in accordance with CEQA Guidelines Section 15074; and

WHEREAS, on January 23, 2024, the Planning Commission held a public hearing and considered the staff report, oral report, the testimony, and the written evidence submitted by and on behalf of the applicant and by members of the public; and

WHEREAS, on January 23, 2024, the Planning Commission recommended to the City Council that the Project be approved; and

WHEREAS, on or about February 23, 2024, notice of the City Council's public hearing for the Project was published in the Redlands Daily Facts by the City Clerk; and

WHEREAS, on March 5, 2024, the City Council held a public hearing and considered the staff written and oral reports, the recommendation of the Planning Commission, the testimony and written evidence submitted by and on behalf of the applicant, and testimony by members of the public; and

WHEREAS, following the public hearing on March 5, 2024, the City Council determined that approval of the proposal is in the best interests of the public health, safety, and general welfare.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. California Environmental Quality Act. The proposed Project is subject to the California Environmental Quality Act (CEQA), and the City Council has adopted Resolution No. 8851 certifying and adopting the Mitigated Negative Declaration and related Mitigation Monitoring/Reporting Program for the project.

Section 2. Findings for Approval of Tentative Tract Map No. 20490. The City Council of the City of Redlands hereby approves Tentative Tract Map No. 20490 for the Project subject to the Conditions of Approval attached hereto as Exhibits "A" and "B," and based upon the following findings:

1. *The proposed map is consistent with the General Plan or any applicable specific plan, or other applicable provisions of the Redlands Municipal Code.*

The proposed map will be consistent with the Redlands General Plan and the Redlands Municipal Code. The proposed project site for the detached single-family residential development is currently designated on the General Plan land use map as Low Density Residential. The existing zoning designation is Special Development (EV/SD) District within the East Valley Corridor Specific Plan, and the applicant has filed applications for a Specific Plan Amendment and Zone Change to change the zoning district to Single Family Residential (R-1), which would allow the proposed density of development with the accompanying Density Bonus pursuant to California State Law. The application is consistent with General Plan policies 4-P.8, 4-P.9, 4-P16, 4-A.7, and 4-A.8 of the Livable Community chapter. The applicable zoning designation will be Single Family Residential (R-1) and the proposed density and housing type would be consistent with the General Plan land use designation as well as the zoning designation. The project meets the applicable development standards for the R-1 zoning district.

2. *The site is physically suitable for the proposed type of development.*

The project site is physically suitable for the type of development. The existing site has a relatively flat topography within the development area and is large enough to subdivide the site into 18 single-family residential lots and two lettered lots, and comply with the

minimum lot sizes and dimensions required of the R-1 zoning district. The site has adequate street frontage along Karon Street for driveway access and utility service connections. All on-site and off-site improvements proposed as part of the project's design will meet applicable City standards and provide a safe and efficient environment for the residents as well as surrounding development.

3. The site is physically suitable for the density of the development.

The site is physically suitable for the density of the development. The proposed project site for the detached single-family development is designated on the General Plan land use map as Low Density Residential. The zoning designation is proposed to change to R-1, Single Family Residential for consistency with the General Plan, and which would allow the proposed density of development. The applicable zoning designation should be R-1, Single Family Residential and the proposed density of single-family development would be consistent with the General Plan land use designation. The project meets the applicable development standards for the zoning district. The size and the shape of the parcel is suitable to be subdivided into 18 residential lots (for sale) and two lettered lots consisting of a pocket park and water quality management facilities.

4. The design of the subdivision or the proposed improvements is not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.

The design of the subdivision and proposed improvements is not likely to cause substantial environmental damage or injure fish or wildlife or their habitat. The developable portions of the site do not contain any biological resources including fish or wildlife, and based on the Initial Study that has been prepared for the project, there are no environmental factors that cannot be mitigated to a level of less than significant.

5. The design of the subdivision or the type of improvements are not likely to cause serious public health problems.

The design of the subdivision or the type of improvements are not likely to cause serious public health problems. The proposed project would accommodate a single-family residential subdivision, and is not likely to cause any serious public health problems as the project is designed with improvements that meets all City and State building and fire codes, no offensive emissions or odors will be associated with the development, and the ambient noise will not affect residential properties because all noise will be mitigated to a level of less than significant as shown in the Initial Study.

6. *The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision.*

The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision. Each proposed residential lot will have access to Karon Street. The project will provide pedestrian and vehicular access in the immediate vicinity through the construction of public improvements. In addition, the project is responsible for installing or repairing associated street improvements such as curb and gutter adjacent to the project, consistent with City requirements.

7. *That pursuant to Section 66474.4 of the Subdivision Map Act, the land is not subject to a contract entered into pursuant to the California Land Conservation Act of 1965 (commencing with section 51200 of the Government Code) and that the resulting parcels following a subdivision of the land would be too small to sustain their agricultural use.*

The subject property is not under a Williamson Act Contract pursuant to the California Land Conservation Act of 1965, and will not be detrimental or otherwise affect lands in agricultural use.

Section 3. Findings for Commission Review and Approval No. 940. The City Council of the City of Redlands hereby approves Commission Review & Approval No. 940 for the Project subject to the Conditions of Approval attached hereto as Exhibits "A" and "B," and based upon the following findings:

1. *The site for the intended use is adequate in size and shape to accommodate the use, and all of the required yards, setbacks, walls or fences, landscaping and other features will adjust the use to those existing or permitted future uses of land in the neighborhood.*

The site is adequate in size and shape to accommodate the proposed use. The subject property proposed for single-family development is 3.38 gross acres and will be developed with 18 residential lots (minimum lot size of 7,200 square feet) and two lettered lots for related improvements and amenities. The project will provide the necessary on-site and offsite improvements including new roadway, curbs, gutters, and sidewalks, and driveway access to each residence. The project site complies with the applicable development standards for the Single Family Residential (R-1) District including lot width, lot depth, and minimum lot size. The proposed use will be compatible with the surrounding uses as it is located to the immediate west of similar existing single-family development. The

proposed project will be consistent with the anticipated future residential development on parcels with residential land use designations in the immediate vicinity.

2. *The site for the proposed use relates to streets and highways which are properly designed and improved to carry the type and quantity of traffic generated or to be generated by the proposed use.*

The site is designed to carry the type and quantity of traffic generated by the proposed use. The site will provide new improved access to the site by improving Karon Street to include a full vehicle travel lane, curb, gutter and along the project's frontage. These improvements are designed to carry the volume of residential traffic anticipated to be generated by the single-family development and multifamily development. These improvements will implement the project's portion of the roadways designated for the area by the General Plan as well as additional improvements necessary to facilitate required access.

3. *The conditions set forth in the approval and those shown on the approved site plan are deemed necessary to protect the public health, safety and general welfare.*

The conditions of approval for the project will protect the public health, safety, and general welfare. The project site will be developed in accordance with standard engineering design requirements as well as standard building code and fire code requirements. The project has been conditioned to comply with the applicable provisions of the Redlands Municipal Code.

Section 4. Effective Date. This Resolution shall become effective concurrent with the effective date of Ordinance No. 2960 (Zone Change No. 469) adopted by the City Council.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2024.

_____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

EXHIBIT A
DEVELOPMENT SERVICES DEPARTMENT
CONDITIONS OF APPROVAL
(Tentative Tract Map No. 20490 and Commission Review and Approval No. 940)

Planning Division

1. This permit/approval is for Tentative Tract Map No. 20490 and Commission Review & Approval No. 940, for the "Lugonia Village Residential Project" generally described as the following:
    a. The subdivision of 3.47 net acres into twenty (20) lots with eighteen (18) numbered lots for single-family residential development, one lettered lot for a private park, and one lettered lot for stormwater facilities;
    b. Construction of a total of eighteen (18) single family homes fronting along Karon Street.
    c. Common recreational open space (privately-owned with private access) outdoors for use by the project's residents and residential guests;
    d. Related improvements including frontage and street improvements in accordance with the civil engineering plans.

2. This permit/approval shall expire two (2) years from the date of project approval (will expire on January 23, 2026), unless construction has commenced pursuant to a building or engineering permit(s), or a time extension is granted in accordance with the Redlands Municipal Code (RMC Section 18.12.090 for Commission Review & Approval; and RMC Sections 17.07.110 and 17.07.120 for Subdivision Regulations).

3. Pursuant to Government Code Section 66020(d), certain fees, dedications, reservations or exactions imposed by the City as a condition of approval of this project are subject to a statutory ninety (90) day protest period. Please be advised that the ninety (90) day protest period for those fees, dedications, reservations and exactions which are subject to Government Code Section 66020(a) has commenced to run on the date this project was approved by the City.

4. The applicant for this permit, and its successors and assigns, shall defend, indemnify and hold harmless the City of Redlands, and its elected officials, officers, agents and employees, from and against any and all claims, actions, and proceedings to attack, set aside, void or annul the approval of this permit by the City, or brought against the City due to acts or omissions in any way connected to the applicant's project that is the subject of this permit. This indemnification shall include, but not be limited to, damages, fees, costs, liabilities, and expenses incurred in such actions or proceedings, including damages for the injury to property or persons, including death of a person, and any award of attorneys' fees. In the event any such action is commenced to attack, set aside, void or annul all, or any, provisions of this permit, or is commenced for any other reason against the City for acts or omissions relating to the applicant's project, within fourteen (14) City business days of the same, the applicant shall file with the City a performance bond or irrevocable letter of credit

(together, the "Security") in a form satisfactory to the City and in the amount of Three Hundred Thousand Dollars ($300,000), to ensure applicant's performance of its defense and indemnity obligations under this condition. The failure of the applicant to provide the Security shall be deemed an express acknowledgement and agreement by the applicant that the City shall have the authority and right, without objection by the applicant, to revoke all entitlements granted for the project pursuant to this permit. The City shall have no liability to the applicant for the exercise of City's right to revoke this permit.

5. By signing and/or using this permit, the permittee acknowledges all of the conditions imposed and accepts this permit subject to those conditions and with full awareness of the applicable provisions of the Redlands Municipal Code including Title 15 (Buildings and Construction), Title 16 (General Plan), Title 17 (Subdivision Regulations), and Title 18 (Zoning Regulations). Failure of the permittee to sign these conditions does not affect their enforceability by the City or other responsible entity. These conditions are binding upon all future property owners and occupants of the subject property.

6. This permit/approval is granted for the project plans dated July 5, 2023 ("the plans") on file with the Development Services Department.

7. Prior to the issuance of building permits for the project, an Affordable Housing Agreement and Density Bonus Agreement, in a form approved by the City, shall be recorded against the Inclusionary Units or the Residential Development in its entirety, as deemed appropriate by the City Manager in consultation with the City Attorney. The Affordable Housing and Density Bonus Agreement(s) shall ensure that the applicant and/or developer develops the required Inclusionary Housing Units and satisfies all other terms of the Inclusionary Housing Plan, State Density Bonus Law, and the Redlands Municipal Code.

8. No final inspection or Certificate of Occupancy shall be granted until all conditions of approval have been satisfied.

9. The issuance of any permits shall comply with all applicable provisions of the Redlands Municipal Code.

10. All plans submitted to the City shall reflect all Planning Commission and/or City Council approvals and any other changes required by the Commission, Council and/or staff. This condition applies to site plans, landscape plans, elevations, grading, and all other illustrations, text, or plans submitted to the City in connection with the project.

11. The Development Services Director is authorized to approve minor modifications to the approval project plans or any of the conditions of approval if such modifications shall achieve substantially the same results as would strict compliance with said plans and conditions.

12. No Certificate of Occupancy shall be granted for a building or phase, or building permit shall receive final approval and signature, until all applicable Conditions of Approval have been satisfied for that building or phase.

13. The final maps shall substantially conform to the tentative maps as approved by the Planning Commission.

14. A copy of the approved Conditions of Approval shall be included on the cover page of the construction plans submitted to the Building Division.

15. The applicant shall comply with all applicable federal, state, and local laws. Violations or convictions of any of those laws in connection with the use may be cause for revocation of this permit.

16. All off-site and on-site utilities shall be placed underground. Prior to approval of the final map the applicant shall submit plans to be approved by the Municipal Utilities & Engineering Director and the Development Services Director, that detail undergrounding of all utilities for the project.

17. Transformer cabinets and gas meters shall not be located within required setbacks and/or adjacent to public streets, and shall be screened from public view either by architectural treatment or with landscaping. Multiple electrical meters and panels shall be fully enclosed and incorporated into the overall architectural design of the building(s). Backflow preventers shall be enclosed with landscaping that will provide complete screening upon maturity. The location and method of enclosure or screening of this equipment shall be shown on the construction plans and landscape plans prior to building permit issuance. Location of said equipment shall be coordinated with appropriate utility company (i.e., Southern California Gas Company or Southern California Edison Company). The applicant shall submit plans showing details of screening subject to review and approval by the Development Services Director, prior to issuance of building permits.

18. Plans submitted for plan check shall include an exterior lighting plan, including fixture and pole designs, for review and approval by the Development Services Director or designee. Prior to building permit issuance, a lighting and photometric plan shall be submitted demonstrating that adequate lighting ranges will be provided throughout the development without creating light spillover, light pollution, or conflicts with surrounding factors such as tree locations, off-site or adjacent lighting.

19. Prior to issuance of building permits, Developer shall demonstrate that light poles will not conflict with tree locations. Developer shall submit a plan showing both the lighting and landscape on the same sheet. Fixtures on exterior light poles shall direct lighting downward (e.g., contain a flat lens and/or have shielding that directs light downward and contains glare).

20. Prior to the issuance of building permits, the applicant shall submit plans detailing that roof screening is of adequate height to screen any roof-top equipment from public view on all sides, subject to review and approval by the Development Services Director. Screening of air conditioning units and other equipment on the buildings shall be incorporated into or

compatible with the architectural design of the buildings. All equipment shall be screened from public view of adjacent roadways and freeways. Plumbing vents, ducts and other appurtenances protruding from the roof of structures shall be placed so that they will not be visible from the front of the property or other major public vantage points. Developer shall include a note on the construction plumbing drawings of exterior elevations to indicate to contractors that roof features shall be grouped and located in the described manner. Roof vents shall be shown on construction drawings and painted to match roof material color.

21. Any gutters, downspouts, pipes, and other drainage appurtenances shall be designed and shall be placed so that they will not be visible from the front of the property (i.e., from public right-of-way) or other major public vantage points.

22. Utility meters shall be fully screened and incorporated into the overall architectural design of the building (e.g., interior room, cabinet with wing wall, or equivalent complete screening). Any enclosures or screening shall be architecturally treated to match the exterior of the attached structure.

23. If any bollards or similar devices are used along street frontages or interior drive aisles, then the bollards or the equivalent shall be decorative in nature and subject to review and approval by the Development Services Director or designee in Plan Check prior to permit issuance. If any steel bollards or pour-in-place bollards are installed, they shall only be installed for protecting utility devices (e.g., transformers above-ground) and shall be painted a dark color (e.g., dark green, brown, or black) to blend with surrounding landscape screening.

24. Telecommunications and television equipment or satellite dishes shall not be located on the exterior of any building (including but not limited to balconies, patios, exterior railings, rooflines, etc.). Dwelling units shall be internally wired for all available utility and telecommunications services, with service devices, panels, or meters located within a centralized equipment room. The equipment room(s) in each building shall be fully enclosed and incorporated into the overall architectural design of the building(s). Any satellite dishes/receivers shall only be located on the roof and shall be completely screened from public view on all sides.

25. Where any public sidewalks are adjacent to slopes or parkways with slopes (e.g., downslopes), a 6” concrete curb may be required to be constructed with the sidewalk. Hand railings or guard rails should be avoided, if feasible. Prior to permit issuance, Developer shall identify any areas with slopes and parkways on the civil plans and identify construction of a 6” concrete curb as needed.

26. Prior to issuance of any building or engineering permit for any building or phase of the project, the Developer shall prepare and submit a Construction Parking Management Plan for all contractors, workers, and deliveries related to the project site. The Construction Parking Management Plan shall identify areas of the project site, surrounding private properties (with property owner’s authorization), and surrounding public streets that

construction personnel may utilize. Deliveries of construction materials, equipment, trailers, vehicles, etc., shall be performed on the project site to the extent practicable, and avoid the use of public streets and rights-of-way if possible. The Developer and/or on-site primary general contractor (superintendent) shall have responsibility for monitoring and enforcing the approved parking management plan. The plan shall be subject to review and approval by the City Planner or designee, and may be modified by the City after approval to mitigate any unanticipated impacts or public nuisance conditions.

27. Prior to any use of any public street or right-of-way for construction-related activities, the Developer shall submit and receive approval for a Traffic Control Plan. Developer shall be responsible for repairing, replacing, or financially compensating any damages to public rights-of-way (including but not limited to paving, sidewalks, driveways, curbs and gutters, storm drain facilities, parkway landscape, street trees, public utilities, etc.) to the satisfaction of the Director(s) of the Municipal Utilities & Engineering Department and/or the Facilities & Community Services Department, or their designee(s), as applicable.

28. Prior to issuance of a Certificate of Occupancy for a building or phase, Developer shall remove all construction materials and vehicles from the subject property or phase.

29. Developer shall arrange for materials collection during construction, demolition, and occupancy with the City's Solid Waste Division, or Developer shall arrange for self-hauling to an authorized facility.

30. Prior to placing or constructing any signs on the project property, Developer shall obtain a sign permit from the City. Sign locations and illumination are subject to review and approval by the Planning Division under separate permit.

31. Bus Pad and Boarding Area: Prior to issuance of any building or engineering (site improvement) permits, the Developer shall coordinate, with Omnitrans, the design and construction of a sidewalk boarding area and bus pad east of the New York Street traffic signal and Karon Street, and show all bus-related improvements on the plans submitted to the Building Division, in accordance with RMC Section 18.224.020(F).

32. Each single-family home shall have two (2) covered parking spaces as required by the Redlands Municipal Code.

33. Any landscaping and amenities on the common lots within Tract Map No. 20490 shall be maintained by a Home Owners Association (HOA).

34. Front yard landscaping for each lot within Tentative Tract Map No. 20490 shall be planted and installed prior to occupancy of the unit.

35. The applicant shall not make any modifications or changes during construction that are in conflict or contrary to the project’s approved site design, or building elevations without first consulting with the Development Services Director or designee.

36. Any graded slopes greater in height than three feet (3') shall be provided with irrigation systems and planted with groundcover, shrubs, and trees as approved by the Development Services Department and Municipal Utilities & Engineering Department, to prevent erosion.

37. Prior to the issuance of a building permit for walls over three feet in height, or open fences over four feet in height within the front yard setback, the developer shall obtain a Minor Exception Permit.

38. Prior to the issuance of a building permit for walls or fences over six feet in height, the developer shall obtain a Minor Exception Permit.

39. Landscape and Irrigation Plans shall be approved prior to the issuance of building permits. Landscape and Irrigation shall be submitted for plan check to the Development Services Department, Building & Safety Division, for distribution to other departments and for review and approval by the Development Services Director. Plans shall be in compliance with the Water Efficient Landscape Ordinance No. 2724 (Also known as Chapter 15.54 of the RMC).

40. All construction activities shall be limited to the hours between 7:00 a.m. to 6:00 p.m., and no construction activities permitted on Sundays and Federal Holidays.

41. The project site shall be kept in a weed and dust free condition throughout all periods of development.

42. All walls facing public areas or existing development must be decorative in nature, using decorative (split-face or slump stone) block and or a textured finish (i.e. stucco).

Subdivision Conditions (Tentative Tract Map No. 20490):

43. Tentative Tract Map No. 20490 authorizes the subdivision of a total of approximately 3.38 acres into 18 number lots and 2 lettered lots (Lots A and B) located on the north side of Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (Parcel 2 of Tentative Parcel Map No 20469).

44. This Tentative Tract Map shall expire two (2) years or 24 months from the date of project approval, unless the Final Map has been recorded. or a time extension is granted in accordance with the Redlands Municipal Code pursuant to RMC Sections 17.07.110 and 17.07.120 (Subdivision Regulations).

45. Any application(s) for an extension of time of the above expiration date shall be filed with the Planning Division not less than 90 days prior to the expiration date and shall comply with Title 17 (Subdivision Regulations) of the Redlands Municipal Code. Upon application by the subdivider prior to the expiration of the approved or conditionally approved tentative

map, the tentative map shall be automatically extended in accordance with the Subdivision Map Act.

46. The applicant shall record the subdivision by a Final Tract Map. The Final Tract Map(s) shall comply with the Subdivision Map Act and the Redlands Municipal Code (RMC).

47. Any conditions of approval determined by the City to not be completed prior to Final Map approval shall be included within the Subdivision Improvement Agreement entered into by the developer with the City.

48. Lot A shall be maintained for common open space for residents of the development.

49. Lot B shall be maintained for stormwater and water quality management purposes.

50. The applicant shall establish a Home Owners Association (HOA) for the care and maintenance of all property improvements held in common ownership of the subdivision. The HOA shall be formed for the property, and Conditions, Covenants and Restrictions (CC&R's) shall be prepared, submitted for review and approval by the City Attorney, **prior to approval of the final map**. The HOA and the CC&R's shall cover the care and maintenance of all property and improvements held in common ownership of the subdivision and shall also cover the care and maintenance of parkways, groves, basins, and all lettered lots within the development.

CEQA Mitigation Measures:

51. Mitigation Measure BIO-1

A pre-construction burrowing owl clearance survey shall be conducted no less than 14 days prior to any vegetation removal or ground-disturbing activities to avoid impacts to burrowing owls and/or occupied burrows. The pre-construction clearance survey shall be conducted by a qualified biologist and in accordance with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). A second clearance survey shall be conducted within 24 hours prior to ground disturbance. Documentation of surveys and findings shall be submitted to the City of Redlands for review and file. If no burrowing owls or occupied burrows are detected, Project activities may begin, and no additional avoidance and minimization measures shall be required.

If an occupied burrow is found outside, but within 500 feet, of the development footprint, the qualified biologist shall establish a "no-disturbance" buffer around the burrow location(s). The size of the "no-disturbance" buffer shall be determined in consultation with the California Department of Fish and Wildlife (CDFW) and be based on the species status (i.e., breeding, non-breeding) and proposed level of disturbance. If an occupied burrow is found within the development footprint and cannot be avoided, a burrowing owl exclusion and mitigation plan shall be prepared and submitted to CDFW for approval prior to initiating Project activities.

52. Mitigation Measure BIO-2

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey shall be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season. Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered "take" and is potentially punishable by fines and/or imprisonment.

If Project-related activities are to be initiated during the nesting season (January 1 to August 31), a pre-construction nesting bird clearance survey shall be conducted by a qualified biologist no more than three (3) days prior to the start of any vegetation removal or ground disturbing activities. The qualified biologist shall survey all suitable nesting habitat within the Project impact area, and areas within a biologically defensible buffer zone surrounding the Project impact area. If no active bird nests are detected during the clearance survey, Project activities may begin, and no additional avoidance and minimization measures shall be required. If an active bird nest is found, the species shall be identified, and a "no-disturbance" buffer shall be established around the active nest. The size of the "no-disturbance" buffer shall be increased or decreased based on the judgement of the qualified biologist and level of activity and sensitivity of the species. The qualified biologist shall periodically monitor any active bird nests to determine if Project-related activities occurring outside the "no-disturbance" buffer disturb the birds and if the buffer should be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, Project activities within the "no-disturbance" buffer may occur following an additional survey by the qualified biologist to search for any new bird nests in the restricted area.

53. Mitigation Measure CUL-1

Prior to the issuance of a grading permit, the Applicant shall provide the Director of the City of Redlands Department of Development Services, or designee, with evidence that it has retained the services of a qualified archaeologist that meets the Secretary of the Interior standards on an on-call basis. Archaeological monitoring shall occur during all excavation activities down to a depth of 3 feet within 100 feet of the former residence location. In the event that cultural resources are discovered during Project activities, all work in the immediate vicinity of the find (within a 100-foot buffer) shall cease and the project archaeologist shall assess the find and determine appropriate treatment. Work on the other portions of the Project outside of the buffered area may continue during this assessment period.

54. Mitigation Measure CUL-2

If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the qualified archaeologist shall develop a Monitoring and Treatment Plan for the remainder of the Project site. The Monitoring and Treatment Plan shall be developed in coordination with the Applicant and the City. The Applicant shall secure a monitoring agreement with the archaeologist prior to the recommencement of work, and the archaeologist shall monitor during the remainder of the ground disturbance activities on the Project site and implement the Plan accordingly.

55. Mitigation Measure GEO-1

Prior to commencement of any grading activity on the Project site, the Applicant shall retain a qualified paleontologist, subject to the review and approval of the Director of the City of Redlands Department of Development Services, Planning Division, or designee. The qualified paleontologist shall be present at the pre-grade conference and shall establish procedures for paleontological resource surveillance and procedures for temporarily halting and redirecting work to permit sampling and identification and evaluation of fossils. If the resources are deemed to be significant, the paleontologist shall determine appropriate actions, in cooperation with the Applicant, which ensure proper exploration and/or salvage. Full-time monitoring and salvage efforts will be necessary whenever previously undisturbed sediments are being disturbed (8 hours per day during grading or trenching activities). Once the earth moving is 50 percent completed, monitoring may be reduced if no fossils are being recovered. The paleontologist shall be empowered to temporarily divert or direct grading operations to facilitate assessment and salvaging of exposed fossils. Collection and processing of matrix samples through fine screens will be necessary to salvage any micro-vertebrate remains.

In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP).

56. Mitigation Measure TRA-1:

Prior to submission of building permits, the Applicant shall coordinate with the City's Engineering Division to determine the anticipated cost of evaluating and optimizing signal timing parameters at the intersection of Tennessee Street and West Lugonia Avenue. The Applicant shall submit payment to the Engineering Division covering the determined cost in full, consistent with County guidelines. The Building and Safety Division shall confirm

the completion of payment prior to issuing building permits. Upon conclusion of Project construction, the Building and Safety Division shall not issue a Certificate of Occupancy to the Applicant until receiving confirmation from the City that signal optimization has been completed.

57. Mitigation Measure TCR-1:

Native American Treatment Agreement. Prior to the issuance of grading permits, the Applicant shall enter into a Tribal Monitoring Agreement with the Consulting Tribe(s) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification.

58. Mitigation Measure TCR-2:

Retention of Archaeologist. Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist shall conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal Representative. The training session shall focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event.

59. Mitigation Measure TCR-3:

Cultural Resource Management Plan. Prior to any ground-disturbing activities the Project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the Project site. This Plan shall be written in consultation with the Consulting Tribe(s) and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the Project schedule.

60. Mitigation Measure TCR-4:

Pre-Grade Meeting. The retained qualified archeologist and Consulting Tribe(s) representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.

61. Mitigation Measure TCR-5:

On-site Monitoring. During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

62. Mitigation Measure TCR-6:

Inadvertent Discovery of Cultural Resources. In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground-disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed. If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s]. The archaeologist shall notify the Lead Agency and Consulting Tribe(s) of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the Consulting Tribe(s), and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference:

A. Full avoidance.

B. If avoidance is not feasible, Preservation in place.

C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction.

D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)

63. Mitigation Measure TCR-7:

Inadvertent Discovery of Human Remains. The Consulting Tribe(s) requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. No photographs are to be taken except by the coroner, with written approval by the Consulting Tribe(s).

A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e., clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98.

B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5.

C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98

D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial shall not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations shall be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.

64. Mitigation Measure TCR-8:

Final Report. The final report[s] created as a part of the Project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the City and Consulting Tribe(s) for review and comment. After approval of all parties, the final reports shall be submitted to the Eastern Information Center, and the Consulting Tribe(s).

Building Division

65. Building plans submitted for plan check shall consist of complete construction drawings including structural calculations, energy calculations and soils report to Building and Safety for plan review in accordance with the current edition of the California Building and Fire Codes including all local ordinances and standards which are effective at the time of Plan Check Submittal.

Facilities and Community Services Department

66. The City maintains a list of acceptable street trees by species, by street name, and by tree district, pursuant to RMC 12.52.050. Street trees for public streets adjacent to the project must be selected from this approved list.

67. Prior to issuance of any buildings permits for any building, the Developer shall prepare and submit a Trash Management Plan. The plan shall provide estimates of trash generation, estimates for the numbers and sizes of containers and facilities, schedule for City services, pertinent instructions for on-site maintenance staff (e.g., bins and containers shall not be placed on public streets and left unattended outdoors for more than two hours before or after trash service pick-up, bins and containers shall not be placed or staged in a manner that obstructs any vehicle travel lanes, etc.), and other necessary information as required by the City. The plan shall be subject to review and approval by the Facilities & Community Services Department and the Development Services Department, and may be modified by the City after approval to mitigate any unanticipated impacts or public nuisance conditions.

    a. Each building and building pad shall be designed to accommodate all necessary refuse storage rooms, bins and containers, hallways, access paths, and other structural elements to be completely screened or enclosed. Refuse and recycling storage rooms and all bins or containers shall be completely screened from view from any streets (when not placed outdoors for scheduled pick-up and hauling).

Fire Department

68. Fuels Management and Weed Abatement:

a. From the present time until project construction phase, property owner is responsible to maintain compliance with Redlands Municipal Code Chapter 8.40 regarding Weed Abatement and Fuels Management.

b. Weeds and annual grasses shall be maintained at a 4 inches of growth or less.

c. Tumbleweeds and similar uncultivated vegetation shall be removed.

69. Gates shall be designed for emergency access, and incorporate Knox Rapid Access System, subject to approval by the Redlands Fire Department.

70. Fire Protection Plan: Prior to the issuance of building permits, a separate Fire Master Plan is required for submittal to the RFD. It shall be a site plan reflecting all the following fire department related items:

a. Fire hydrant locations, public and private, as well as the associated fire flow compliance.
b. FDC locations.
c. Dimensions from FDC's to hydrants.
d. DCDA locations.
e. Fire sprinkler riser locations and location of system serving.
f. FACP locations.
g. Knox box and Knox switch locations.
h. Gate locations.
i. Fire lane locations, dimensions, lengths, turning radii at corners and circles/cul-de-sacs.
j. Fire lane signage and striping.
k. Property dimensions or accurate scale.
l. Building locations and heights.
m. Building addresses and suite addresses.
n. Ground ladder access to emergency escape openings.

Other City Departments/Divisions:

71. Conditions of Approval from the following City Departments/Divisions are applicable to the project, and are hereby incorporated by reference:

a. Land Use Engineering Division (Exhibit "B")

Brian Desatnik
Development Services Director

EXHIBIT B

LAND USE ENGINEERING DIVISION
CONDITIONS OF APPROVAL
(Tentative Tract Map No. 20490 and Commission Review & Approval No. 940)

[Attached]

RESOLUTION NO. 8556

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS APPROVING TENTATIVE TRACT MAP NO. 20491 AND COMMISSION REVIEW & APPROVAL NO. 942 FOR THE SUBDIVISION OF PARCEL 1 OF TENTATIVE PARCEL MAP NO. 20469 FOR CONDOMINIUM PURPOSES FOR 72 RESIDENTIAL TOWNHOMES (CONDOMINIUM AIRSPACE UNITS PLUS COMMON LOTS), AND THE CONSTRUCTION OF A 72-UNIT TOWNHOUSE DEVELOPMENT, FRONTING ALONG A PROPOSED EXTENSION OF PENNSYLVANIA AVENUE AND WESTERLY OF KARON STREET.

WHEREAS, Redlands Summit, LLC ("Applicant"), has submitted an application for Tentative Tract Map No. 20491 and Commission Review & Approval No. 942 to subdivide Parcel 1 of Tentative Parcel Map No. 20469 for condominium purposes, to be utilized for seventy-two (72) residential condominium units, and the construction of a 72-unit townhouse development and related site improvements and amenities on a project site fronting along a proposed extension of Pennsylvania Avenue westerly of Karon Street; and

WHEREAS, the Applicant filed the applications concurrently with General Plan Amendment No. 143, Amendment No. 48 to Specific Plan No. 40, Zone Change No. 469, and request for a Density Bonus Agreement; and

WHEREAS, the above-referenced development and legislative applications filed with the City of Redlands are referred to hereinafter as the "Project" and "Project Entitlements"; and

WHEREAS, the Applicant has submitted an Inclusionary Housing Plan in accordance with Redlands Municipal Code Chapter 18.230 (Inclusionary Housing) and proposes to fulfill the inclusionary housing requirements by providing twenty-eight (28) very low-income affordable housing units within the project; and

WHEREAS, the Project is subject to the California Environmental Quality Act (CEQA), the City has prepared an Initial Study for the Project in accordance with the State CEQA Guidelines, and adopted a Mitigated Negative Declaration for the project in accordance with CEQA Guidelines Section 15074; and

WHEREAS, on January 23, 2024, the Planning Commission held a public hearing and considered the staff report, oral report, the testimony, and the written evidence submitted by and on behalf of the applicant and by members of the public; and

WHEREAS, on January 23, 2024, the Planning Commission recommended to the City Council that the Project be approved; and

WHEREAS, on or about February 23, 2024, notice of the City Council's public hearing for the Project was published in the Redlands Daily Facts by the City Clerk; and

WHEREAS, on March 5, 2024, the City Council held a public hearing and considered the staff written and oral reports, the recommendation of the Planning Commission, the testimony and written evidence submitted by and on behalf of the applicant, and testimony by members of the public; and

WHEREAS, following the public hearing on March 5, 2024, the City Council determined that approval of the proposal is in the best interests of the public health, safety, and general welfare.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. California Environmental Quality Act. The proposed Project is subject to the California Environmental Quality Act (CEQA), and the City Council has adopted Resolution No. 8551 certifying and adopting the Mitigated Negative Declaration and related Mitigation Monitoring/Reporting Program for the project.

Section 2. Findings for Approval of Tentative Tract Map No. 20491. The City Council of the City of Redlands hereby approves Tentative Tract Map No. 20491 for the Project subject to the Conditions of Approval attached hereto as Exhibits "A" and "B," and based upon the following findings:

1. *The proposed map is consistent with the General Plan or any applicable specific plan, or other applicable provisions of the Redlands Municipal Code.*

The proposed map will be consistent with the Redlands General Plan and the Redlands Municipal Code. The proposed project site is designated on the General Plan land use map as Commercial, and has existing zoning designation as Special Development (EV/SD) District within the East Valley Corridor Specific Plan. The applicant has filed a General Plan Amendment, Specific Plan Amendment, and Zone Change which would change the General Plan land use designation for the high-density residential portion of the project to High Density Residential and change the zoning district for the high-density residential portions of the project to Multiple Family Residential (R-3), which would allow the proposed densities with the accompanying Density Bonus pursuant to State Density Bonus Law. The application is consistent with the General Plan's policies 4-P.8, 4-P.9, 4-P16, 4-A.7, 4-A.8 of the Livable Community chapter. The applicable zoning designation is the Multiple Family Residential (R-3) zoning district, and with the Density Bonus, the proposed densities and product type would be consistent with the General Plan land use designations, as amended. The project meets the applicable development standards for the applicable zoning district, with the exception of those concessions and waivers identified in the Density Bonus Agreement in accordance with State Density Bonus Law.

2. The site is physically suitable for the proposed type of development.

The project site is physically suitable for the type of development. The existing site has a relatively flat topography within the development area and is large enough to subdivide the site for condominium purposes, and the utilization of the condominium map for 72 residential condominium units. The overall lot size complies with the minimum lot sizes and dimensions required of the R-3 zoning district (for condominium development), upon approval of the related amendments and zone change. The site has adequate frontage on the proposed Pennsylvania Avenue extension where vehicular access, utility services, and dispersion of project traffic can all occur. All on-site and off-site improvements proposed as part of the project's design will meet applicable City standards and provide a safe and efficient environment for the residents as well as surrounding neighborhood.

3. The site is physically suitable for the density of the development.

The site is physically suitable for the density of the development. The project site has been identified in the City's adopted 2021-2029 Housing Element as a site suitable for higher density residential development. The proposed project is designated on the General Plan land use map as Commercial and has existing zoning as Special Development (EV/SD) District. The applicant has filed a General Plan Amendment, Specific Plan Amendment, and Zone Change which would change the General Plan land use designation for the high-density residential portion of the project to High Density Residential, and change the zoning district for the high-density residential portion of the project to Multiple Family Residential (R-3), which would allow the proposed densities with the accompanying Density Bonus pursuant to California State Law. The applicable zoning designation is the Multiple Family Residential (R-3), and with the Density Bonus, the proposed density would be consistent with the General Plan land use designation, as amended. The proposed project meets the applicable development standards for the zoning district, with the exception of those concessions and waivers identified in the Density Bonus Agreement in accordance with State Density Bonus Law. The size and the shape of the parcel is suitable to be subdivided into 72 condominium units, and related site improvements and amenities, while ensuring those lots have adequate space for vehicular access, landscape and open space areas, and water quality management facilities.

4. The design of the subdivision or the proposed improvements is not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.

The design of the subdivision and proposed improvements is not likely to cause substantial environmental damage or injure fish or wildlife or their habitat. The developable portions of the site do not contain any biological resources including fish or wildlife, and based on

the Initial Study that has been prepared for the project, there are no environmental factors that cannot be mitigated to a level of less than significant.

5. *The design of the subdivision or the type of improvements are not likely to cause serious public health problems.*

The design of the subdivision or the type of improvements are not likely to cause serious public health problems. The proposed project would accommodate a multifamily residential subdivision, and is not likely to cause any serious public health problems as the project is designed with improvements that meets all City and State building and fire codes, no offensive emissions or odors will be associated with the development, and the ambient noise will not affect residential properties because all noise will be mitigated to a level of less than significant as shown in the Initial Study.

6. *The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision.*

The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision. The project will improve pedestrian and vehicular access in the immediate vicinity through the improvement and construction of public facilities. In addition, the project is responsible for installing or repairing associated street improvements such as curb and gutter, adjacent to the project, consistent with City requirements.

7. *That pursuant to Section 66474.4 of the Subdivision Map Act, the land is not subject to a contract entered into pursuant to the California Land Conservation Act of 1965 (commencing with section 51200 of the Government Code) and that the resulting parcels following a subdivision of the land would be too small to sustain their agricultural use.*

The subject property is not under a Williamson Act Contract pursuant to the California Land Conservation Act of 1965, and will not be detrimental or otherwise affect lands in agricultural use.

Section 3. Findings for Commission Review and Approval No. 942. The City Council of the City of Redlands hereby approves Commission Review & Approval No. 942 for the Project subject to the Conditions of Approval attached hereto as Exhibits "A" and "B," and based upon the following findings:

1. *The site for the intended use is adequate in size and shape to accommodate the use, and all of the required yards, setbacks, walls or fences, landscaping and other features*

will adjust the use to those existing or permitted future uses of land in the neighborhood.

The site is adequate in size and shape to accommodate the proposed use. The subject property is 4.75 acres in size and will be developed with a 72-unit townhome community, with on-site parking, landscape, and recreational amenities. The project will provide the necessary on-site and off-site improvements including new roadway, curbs, gutters, and sidewalks, and interior drive aisles. With the Density Bonus, the project site complies with the applicable development standards for the Multiple Family Residential (R-3) District, such as setbacks, height, parking, common and private open space, and landscaping. The proposed use will be compatible with the surrounding uses as it is buffered from lower-density neighborhoods to the east by a new proposed single-family development, complete with required walls separating the zoning districts. The subject project site is also surrounded on all other sides by high-density residential and commercial areas, which allow for more intense uses of land. The proposed project will be consistent with the anticipated future residential development on parcels with residential land use designations in the immediate vicinity.

2. *The site for the proposed use relates to streets and highways which are properly designed and improved to carry the type and quantity of traffic generated or to be generated by the proposed use.*

The site is designed to carry the type and quantity of traffic generated by the proposed use. The site will provide new improved access to the site by extending Pennsylvania Avenue, which safely accommodates vehicular and pedestrian access to the project and connect the proposed development to the City's street network. New roadway, curb, gutter, and sidewalk along the project's frontage is incorporated into the project. As analyzed in the traffic study for the project, these improvements are designed to carry the volume of residential traffic anticipated to be generated by the project and implement the project's portion of the roadways designated for the area by the General Plan.

3. *The conditions set forth in the approval and those shown on the approved site plan are deemed necessary to protect the public health, safety and general welfare.*

The conditions of approval for the project will protect the public health, safety, and general welfare. The project site will be developed in accordance with standard engineering design requirements as well as standard building code and fire code requirements. The project has been conditioned to comply with the applicable provisions of the Redlands Municipal Code.

Section 4. Effective Date. This Resolution shall become effective concurrent with the effective date of Ordinance No. 2960 (Zone Change No. 469) adopted by the City Council.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2024.

_____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

EXHIBIT A
DEVELOPMENT SERVICES DEPARTMENT
CONDITIONS OF APPROVAL
(Tentative Tract Map No. 20491 and Commission Review and Approval No. 942)

Planning Division

1. This permit/approval is for Tentative Tract Map No. 20491 and Commission Review & Approval No. 942, for the "Lugonia Village Residential Project" generally described as the following:
    a. The subdivision subdivide Parcel 1 of Tentative Parcel Map No. 20469 map for condominium purposes, to be utilized for seventy-two (72) residential condominium units;
    b. Construction of a 72-unit townhouse development fronting on a proposed extension of Pennsylvania Avenue. including onsite parking and recreation areas;
    c. Common recreational open space (privately-owned with private access) outdoors for use by the project's residents and residential guests;
    d. Related improvements including frontage and street improvements in accordance with the civil engineering plans.

2. This permit/approval shall expire two (2) years from the date of project approval (will expire on January 23, 2026), unless construction has commenced pursuant to a building or engineering permit(s), or a time extension is granted in accordance with the Redlands Municipal Code (RMC Section 18.12.090 for Commission Review & Approval; and RMC Sections 17.07.110 and 17.07.120 for Subdivision Regulations).

3. Pursuant to Government Code Section 66020(d), certain fees, dedications, reservations or exactions imposed by the City as a condition of approval of this project are subject to a statutory ninety (90) day protest period. Please be advised that the ninety (90) day protest period for those fees, dedications, reservations and exactions which are subject to Government Code Section 66020(a) has commenced to run on the date this project was approved by the City.

4. The applicant for this permit, and its successors and assigns, shall defend, indemnify and hold harmless the City of Redlands, and its elected officials, officers, agents and employees, from and against any and all claims, actions, and proceedings to attack, set aside, void or annul the approval of this permit by the City, or brought against the City due to acts or omissions in any way connected to the applicant's project that is the subject of this permit. This indemnification shall include, but not be limited to, damages, fees, costs, liabilities, and expenses incurred in such actions or proceedings, including damages for the injury to property or persons, including death of a person, and any award of attorneys' fees. In the event any such action is commenced to attack, set aside, void or annul all, or any, provisions of this permit, or is commenced for any other reason against the City for acts or omissions relating to the applicant's project, within fourteen (14) City business days of the same, the applicant shall file with the City a performance bond or irrevocable letter of credit

(together, the "Security") in a form satisfactory to the City and in the amount of Three Hundred Thousand Dollars ($300,000), to ensure applicant's performance of its defense and indemnity obligations under this condition. The failure of the applicant to provide the Security shall be deemed an express acknowledgement and agreement by the applicant that the City shall have the authority and right, without objection by the applicant, to revoke all entitlements granted for the project pursuant to this permit. The City shall have no liability to the applicant for the exercise of City's right to revoke this permit.

5. By signing and/or using this permit, the permittee acknowledges all of the conditions imposed and accepts this permit subject to those conditions and with full awareness of the applicable provisions of the Redlands Municipal Code including Title 15 (Buildings and Construction), Title 16 (General Plan), Title 17 (Subdivision Regulations), and Title 18 (Zoning Regulations). Failure of the permittee to sign these conditions does not affect their enforceability by the City or other responsible entity. These conditions are binding upon all future property owners and occupants of the subject property.

6. This permit/approval is granted for the project plans dated July 5, 2023 ("the plans") on file with the Development Services Department.

7. Prior to the issuance of building permits for the project, an Affordable Housing Agreement and Density Bonus Agreement, in a form approved by the City, shall be recorded against the Inclusionary Units or the Residential Development in its entirety, as deemed appropriate by the City Manager in consultation with the City Attorney. The Affordable Housing and Density Bonus Agreement(s) shall ensure that the applicant and/or developer develops the required Inclusionary Housing Units and satisfies all other terms of the Inclusionary Housing Plan, State Density Bonus Law, and the Redlands Municipal Code.

8. No final inspection or Certificate of Occupancy shall be granted until all conditions of approval have been satisfied.

9. The issuance of any permits shall comply with all applicable provisions of the Redlands Municipal Code.

10. All plans submitted to the City shall reflect all Planning Commission and/or City Council approvals and any other changes required by the Commission, Council and/or staff. This condition applies to site plans, landscape plans, elevations, grading, and all other illustrations, text, or plans submitted to the City in connection with the project.

11. The Development Services Director is authorized to approve minor modifications to the approval project plans or any of the conditions of approval if such modifications shall achieve substantially the same results as would strict compliance with said plans and conditions.

12. No Certificate of Occupancy shall be granted for a building or phase, or building permit shall receive final approval and signature, until all applicable Conditions of Approval have been satisfied for that building or phase.

13. The final maps shall substantially conform to the tentative maps as approved by the Planning Commission.

14. A copy of the approved Conditions of Approval shall be included on the cover page of the construction plans submitted to the Building Division.

15. The applicant shall comply with all applicable federal, state, and local laws. Violations or convictions of any of those laws in connection with the use may be cause for revocation of this permit.

16. All off-site and on-site utilities shall be placed underground. Prior to approval of the final map the applicant shall submit plans to be approved by the Municipal Utilities & Engineering Director and the Development Services Director, that detail undergrounding of all utilities for the project.

17. Transformer cabinets and gas meters shall not be located within required setbacks and/or adjacent to public streets, and shall be screened from public view either by architectural treatment or with landscaping. Multiple electrical meters and panels shall be fully enclosed and incorporated into the overall architectural design of the building(s). Backflow preventers shall be enclosed with landscaping that will provide complete screening upon maturity. The location and method of enclosure or screening of this equipment shall be shown on the construction plans and landscape plans prior to building permit issuance. Location of said equipment shall be coordinated with appropriate utility company (i.e., Southern California Gas Company or Southern California Edison Company). The applicant shall submit plans showing details of screening subject to review and approval by the Development Services Director, prior to issuance of building permits

18. Plans submitted for plan check shall include an exterior lighting plan, including fixture and pole designs, for review and approval by the Development Services Director or designee. Prior to building permit issuance, a lighting and photometric plan shall be submitted demonstrating that adequate lighting ranges will be provided throughout the development without creating light spillover, light pollution, or conflicts with surrounding factors such as tree locations, off-site or adjacent lighting.

19. Prior to issuance of building permits, Developer shall demonstrate that light poles will not conflict with tree locations. Developer shall submit a plan showing both the lighting and landscape on the same sheet. Fixtures on exterior light poles shall direct lighting downward (e.g., contain a flat lens and/or have shielding that directs light downward and contains glare).

20. Prior to the issuance of building permits, the applicant shall submit plans detailing that roof screening is of adequate height to screen any roof-top equipment from public view on all sides, subject to review and approval by the Development Services Director. Screening of air conditioning units and other equipment on the buildings shall be incorporated into or

compatible with the architectural design of the buildings. All equipment shall be screened from public view of adjacent roadways and freeways. Plumbing vents, ducts and other appurtenances protruding from the roof of structures shall be placed so that they will not be visible from the front of the property or other major public vantage points. Developer shall include a note on the construction plumbing drawings of exterior elevations to indicate to contractors that roof features shall be grouped and located in the described manner. Roof vents shall be shown on construction drawings and painted to match roof material color.

21. Any gutters, downspouts, pipes, and other drainage appurtenances shall be designed and shall be placed so that they will not be visible from the front of the property (i.e., from public right-of-way) or other major public vantage points.

22. Utility meters shall be fully screened and incorporated into the overall architectural design of the building (e.g., interior room, cabinet with wing wall, or equivalent complete screening). Any enclosures or screening shall be architecturally treated to match the exterior of the attached structure.

23. If any bollards or similar devices are used along street frontages or interior drive aisles, then the bollards or the equivalent shall be decorative in nature and subject to review and approval by the Development Services Director or designee in Plan Check prior to permit issuance. If any steel bollards or pour-in-place bollards are installed, they shall only be installed for protecting utility devices (e.g., transformers above-ground) and shall be painted a dark color (e.g., dark green, brown, or black) to blend with surrounding landscape screening.

24. Telecommunications and television equipment or satellite dishes shall not be located on the exterior of any building (including but not limited to balconies, patios, exterior railings, rooflines, etc.). Dwelling units shall be internally wired for all available utility and telecommunications services, with service devices, panels, or meters located within a centralized equipment room. The equipment room(s) in each building shall be fully enclosed and incorporated into the overall architectural design of the building(s). Any satellite dishes/receivers shall only be located on the roof and shall be completely screened from public view on all sides.

25. Where any public sidewalks are adjacent to slopes or parkways with slopes (e.g., downslopes), a 6” concrete curb may be required to be constructed with the sidewalk. Hand railings or guard rails should be avoided, if feasible. Prior to permit issuance, Developer shall identify any areas with slopes and parkways on the civil plans and identify construction of a 6” concrete curb as needed.

26. Prior to issuance of any building or engineering permit for any building or phase of the project, the Developer shall prepare and submit a Construction Parking Management Plan for all contractors, workers, and deliveries related to the project site. The Construction Parking Management Plan shall identify areas of the project site, surrounding private properties (with property owner’s authorization), and surrounding public streets that

construction personnel may utilize. Deliveries of construction materials, equipment, trailers, vehicles, etc., shall be performed on the project site to the extent practicable, and avoid the use of public streets and rights-of-way if possible. The Developer and/or on-site primary general contractor (superintendent) shall have responsibility for monitoring and enforcing the approved parking management plan. The plan shall be subject to review and approval by the City Planner or designee, and may be modified by the City after approval to mitigate any unanticipated impacts or public nuisance conditions.

27. Prior to any use of any public street or right-of-way for construction-related activities, the Developer shall submit and receive approval for a Traffic Control Plan. Developer shall be responsible for repairing, replacing, or financially compensating any damages to public rights-of-way (including but not limited to paving, sidewalks, driveways, curbs and gutters, storm drain facilities, parkway landscape, street trees, public utilities, etc.) to the satisfaction of the Director(s) of the Municipal Utilities & Engineering Department and/or the Facilities & Community Services Department, or their designee(s), as applicable.

28. Prior to issuance of a Certificate of Occupancy for a building or phase, Developer shall remove all construction materials and vehicles from the subject property or phase.

29. Developer shall arrange for materials collection during construction, demolition, and occupancy with the City's Solid Waste Division, or Developer shall arrange for self-hauling to an authorized facility.

30. Prior to placing or constructing any signs on the project property, Developer shall obtain a sign permit from the City. Sign locations and illumination are subject to review and approval by the Planning Division under separate permit.

31. Entryways to the condominium communities shall incorporate decorative paving. Decorative paving elements shall not be located within public rights-of-way.

32. Each condominium unit shall have two (2) covered parking spaces as required by the Redlands Municipal Code.

33. Any landscaping and amenities on the common lots within Tract Map No. 20491 shall be maintained by a Home Owners Association (HOA).

34. Streetscape and front yard landscaping Tentative Tract Map No. 20491 shall be planted and installed prior to occupancy of the unit.

35. The applicant shall not make any modifications or changes during construction that are in conflict or contrary to the project's approved site design, or building elevations without first consulting with the Development Services Director or designee.

36. Any graded slopes greater in height than three feet (3') shall be provided with irrigation systems and planted with groundcover, shrubs, and trees as approved by the Development

Services Department and Municipal Utilities & Engineering Department, to prevent erosion.

37. Prior to the issuance of a building permit for walls over three feet in height, or open fences over four feet in height within the front yard setback, the developer shall obtain a Minor Exception Permit.

38. Prior to the issuance of a building permit for walls or fences over six feet in height, the developer shall obtain a Minor Exception Permit.

39. Landscape and Irrigation Plans shall be approved prior to the issuance of building permits. Landscape and Irrigation shall be submitted for plan check to the Development Services Department, Building & Safety Division, for distribution to other departments and for review and approval by the Development Services Director. Plans shall be in compliance with the Water Efficient Landscape Ordinance No. 2724 (Also known as Chapter 15.54 of the RMC).

40. All construction activities shall be limited to the hours between 7:00 a.m. to 6:00 p.m., and no construction activities permitted on Sundays and Federal Holidays.

41. The project site shall be kept in a weed and dust free condition throughout all periods of development.

42. All walls facing public areas or existing development must be decorative in nature, using decorative (split-face or slump stone) block and or a textured finish (i.e. stucco).

Subdivision Conditions (Tentative Tract Map No. 20491):

43. Tentative Tract Map No. 20491 authorizes the subdivision of 4.75 acres for condominium purposes, to be utilized for 72 residential units, located south of a proposed extension of Pennsylvania Avenue and west of Karon Street (Parcel 1 of Tentative Parcel Map No. 20469).

44. This Tentative Tract Map shall expire two (2) years or 24 months from the date of project approval, unless the Final Map has been recorded. or a time extension is granted in accordance with the Redlands Municipal Code pursuant to RMC Sections 17.07.110 and 17.07.120 (Subdivision Regulations).

45. Any application(s) for an extension of time of the above expiration date shall be filed with the Planning Division not less than 90 days prior to the expiration date and shall comply with Title 17 (Subdivision Regulations) of the Redlands Municipal Code. Upon application by the subdivider prior to the expiration of the approved or conditionally approved tentative map, the tentative map shall be automatically extended in accordance with the Subdivision Map Act.

46. The applicant shall record the subdivision by a Final Tract Map. The Final Tract Map(s) shall comply with the Subdivision Map Act and the Redlands Municipal Code (RMC).

47. Any conditions of approval determined by the City to not be completed prior to Final Map approval shall be included within the Subdivision Improvement Agreement entered into by the developer with the City.

48. The applicant shall establish a Home Owners Association (HOA) for the care and maintenance of all property improvements held in common ownership of the subdivision. The HOA shall be formed for the property, and Conditions, Covenants and Restrictions (CC&R's) shall be prepared, submitted for review and approval by the City Attorney, **prior to approval of the final map**. The HOA and the CC&R's shall cover the care and maintenance of all property and improvements held in common ownership of the subdivision and shall also cover the care and maintenance of parkways, groves, basins, and all lettered lots within the development.

49. Conditions, Covenants and Restrictions ("CC&Rs") shall be prepared by the applicant and approved by the City for the condominium project (Tentative Tract Map No. 20491). The CC&Rs shall contain the following:

    a. A provision which reads substantially as follows: "The City shall have the right to review and approve any proposed amendment or termination of [the CC&Rs] when such termination or amendment would alter, amend, terminate or otherwise impair the rights of the City under those provisions of [the CC&Rs] which satisfy the conditions of approval imposed by the City for the project. All proposed amendments shall be submitted to the City's Development Services Director and shall be approved in writing by the City Attorney as a precondition of and prior to the recordation of such amendment."

    b. A provision which reads substantially as follows: "[The CC&Rs] shall be covenants running with the land, and shall, in any event, and without regard to technical classification or designation, legal or otherwise, be, to the fullest extent permitted by law and equity, binding for the benefit and the favor of, and enforceable by the City of Redlands. Although the City of Redlands shall be a beneficiary of [the CC&Rs], and shall have a right to enforce [them], the City of Redlands shall not be obligated hereunder to exercise such rights of enforcement."

    c. CC&Rs shall detail the ownership and maintenance requirements for the development, and include statements that the required recreational open space, drive aisles and common landscape areas for the project shall be owned and maintained by the Home Owners Association for the project in perpetuity.

    d. The CC&Rs shall designate that any required guest parking spaces shall be owned, maintained, and operated by the Homeowners' Association

e. CC&Rs shall include compliance with the project's approved Final Fire Protection Plan.

50. Prior to Final Tract Map clearance, the applicant shall submit one (1) copy of each of the final Articles of Incorporation, Bylaws of the Homeowners' Association, and Declaration of Covenants, Conditions, and Restrictions (CC&Rs) to the Planning Division for review and approval. After recordation of the final CC&Rs, two (2) copies of said recorded CC&Rs shall be submitted to the Planning Division.

51. Building plans submitted for the project shall clearly indicate the structures are condominiums for the applicable dwelling units.

52. Residential condominium construction shall comply with the requirements of Chapter 18.156, Article IV (Condominiums and Condominium Conversions), of the Redlands Municipal Code. Such requirements include but are not limited to:

    a. Wall and floor-ceiling assemblies shall conform to the sound insulation performance criteria promulgated in title 25, California Administrative Code, section 1092, or its successor.
    b. The consumption of gas and electricity within each dwelling unit shall be separately metered so that the unit owner can be separately billed for each utility. A water shutoff valve shall be provided for each unit.
    c. All permanent mechanical equipment, including domestic appliances, which is determined by the building official to be a source or potential source of vibration or noise, shall be shock mounted, isolated from the floor and ceiling, or otherwise installed in a manner approved by the building official to lessen the transmission of vibration and noise.
    d. The anchorages of the permanent mechanical equipment are to be designed to resist the lateral seismic forces, as required by the current edition of the uniform building code. Failure of the city to identify potential sources of vibration on the approval of a specific vibration system does not prevent the city from subsequently requiring additional modification to the mechanical equipment to prevent vibration or noise from being detected in other condominium dwelling units.
    e. The proposed condominium project shall comply with all requirements of building, fire and housing codes, zoning provisions, and other applicable regulations in effect at the time of the application (or as otherwise specified in the approved Development Agreement for the project).

CEQA Mitigation Measures:

53. Mitigation Measure BIO-1

    A pre-construction burrowing owl clearance survey shall be conducted no less than 14 days prior to any vegetation removal or ground-disturbing activities to avoid impacts to burrowing owls and/or occupied burrows. The pre-construction clearance survey shall be

conducted by a qualified biologist and in accordance with the methods outlined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). A second clearance survey shall be conducted within 24 hours prior to ground disturbance. Documentation of surveys and findings shall be submitted to the City of Redlands for review and file. If no burrowing owls or occupied burrows are detected, Project activities may begin, and no additional avoidance and minimization measures shall be required.

If an occupied burrow is found outside, but within 500 feet, of the development footprint, the qualified biologist shall establish a "no-disturbance" buffer around the burrow location(s). The size of the "no-disturbance" buffer shall be determined in consultation with the California Department of Fish and Wildlife (CDFW) and be based on the species status (i.e., breeding, non-breeding) and proposed level of disturbance. If an occupied burrow is found within the development footprint and cannot be avoided, a burrowing owl exclusion and mitigation plan shall be prepared and submitted to CDFW for approval prior to initiating Project activities.

54. Mitigation Measure BIO-2

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey shall be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season. Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered "take" and is potentially punishable by fines and/or imprisonment.

If Project-related activities are to be initiated during the nesting season (January 1 to August 31), a pre-construction nesting bird clearance survey shall be conducted by a qualified biologist no more than three (3) days prior to the start of any vegetation removal or ground disturbing activities. The qualified biologist shall survey all suitable nesting habitat within the Project impact area, and areas within a biologically defensible buffer zone surrounding the Project impact area. If no active bird nests are detected during the clearance survey, Project activities may begin, and no additional avoidance and minimization measures shall be required. If an active bird nest is found, the species shall be identified, and a "no-disturbance" buffer shall be established around the active nest. The size of the "no-disturbance" buffer shall be increased or decreased based on the judgement of the qualified biologist and level of activity and sensitivity of the species. The qualified biologist shall periodically monitor any active bird nests to determine if Project-related activities occurring outside the "no-disturbance" buffer disturb the birds and if the buffer should be increased. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, Project activities within the "no-disturbance" buffer may occur following an additional survey by the qualified biologist to search for any new bird nests in the restricted area.

55. Mitigation Measure CUL-1

Prior to the issuance of a grading permit, the Applicant shall provide the Director of the City of Redlands Department of Development Services, or designee, with evidence that it has retained the services of a qualified archaeologist that meets the Secretary of the Interior standards on an on-call basis. Archaeological monitoring shall occur during all excavation activities down to a depth of 3 feet within 100 feet of the former residence location. In the event that cultural resources are discovered during Project activities, all work in the immediate vicinity of the find (within a 100-foot buffer) shall cease and the project archaeologist shall assess the find and determine appropriate treatment. Work on the other portions of the Project outside of the buffered area may continue during this assessment period.

56. Mitigation Measure CUL-2

If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the qualified archaeologist shall develop a Monitoring and Treatment Plan for the remainder of the Project site. The Monitoring and Treatment Plan shall be developed in coordination with the Applicant and the City. The Applicant shall secure a monitoring agreement with the archaeologist prior to the recommencement of work, and the archaeologist shall monitor during the remainder of the ground disturbance activities on the Project site and implement the Plan accordingly.

57. Mitigation Measure GEO-1

Prior to commencement of any grading activity on the Project site, the Applicant shall retain a qualified paleontologist, subject to the review and approval of the Director of the City of Redlands Department of Development Services, Planning Division, or designee. The qualified paleontologist shall be present at the pre-grade conference and shall establish procedures for paleontological resource surveillance and procedures for temporarily halting and redirecting work to permit sampling and identification and evaluation of fossils. If the resources are deemed to be significant, the paleontologist shall determine appropriate actions, in cooperation with the Applicant, which ensure proper exploration and/or salvage. Full-time monitoring and salvage efforts will be necessary whenever previously undisturbed sediments are being disturbed (8 hours per day during grading or trenching activities). Once the earth moving is 50 percent completed, monitoring may be reduced if no fossils are being recovered. The paleontologist shall be empowered to temporarily divert or direct grading operations to facilitate assessment and salvaging of exposed fossils. Collection and processing of matrix samples through fine screens will be necessary to salvage any micro-vertebrate remains.

In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery shall be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP).

58. Mitigation Measure TRA-1:

Prior to submission of building permits, the Applicant shall coordinate with the City's Engineering Division to determine the anticipated cost of evaluating and optimizing signal timing parameters at the intersection of Tennessee Street and West Lugonia Avenue. The Applicant shall submit payment to the Engineering Division covering the determined cost in full, consistent with County guidelines. The Building and Safety Division shall confirm the completion of payment prior to issuing building permits. Upon conclusion of Project construction, the Building and Safety Division shall not issue a Certificate of Occupancy to the Applicant until receiving confirmation from the City that signal optimization has been completed.

59. Mitigation Measure TCR-1:

Native American Treatment Agreement. Prior to the issuance of grading permits, the Applicant shall enter into a Tribal Monitoring Agreement with the Consulting Tribe(s) for the Project. The Tribal Monitor shall be on-site during all ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind). The Tribal Monitor shall have the authority to temporarily divert, redirect, or halt the ground-disturbing activities to allow identification.

60. Mitigation Measure TCR-2:

Retention of Archaeologist. Prior to any ground-disturbing activities (including, but not limited to, clearing, grubbing, tree and bush removal, grading, trenching, fence post replacement and removal, construction excavation, excavation for all utility and irrigation lines, and landscaping phases of any kind), and prior to the issuance of grading permits, the Applicant shall retain a qualified archaeologist who meets the U.S. Secretary of the Interior Standards (SOI). The archaeologist shall be present during all ground-disturbing activities to identify any known or suspected archaeological and/or cultural resources. The archaeologist shall conduct a Cultural Resource Sensitivity Training, in conjunction with the Tribe[s] Tribal Historic Preservation Officer (THPO), and/or designated Tribal

Representative. The training session shall focus on the archaeological and tribal cultural resources that may be encountered during ground-disturbing activities as well as the procedures to be followed in such an event.

61. Mitigation Measure TCR-3:

Cultural Resource Management Plan. Prior to any ground-disturbing activities the Project archaeologist shall develop a Cultural Resource Management Plan (CRMP) and/or Archaeological Monitoring and Treatment Plan (AMTP) to address the details, timing, and responsibilities of all archaeological and cultural resource activities that occur on the Project site. This Plan shall be written in consultation with the Consulting Tribe(s) and shall include the following: approved Mitigation Measures (MM)/Conditions of Approval (COA), contact information for all pertinent parties, parties' responsibilities, procedures for each MM or COA, and an overview of the Project schedule.

62. Mitigation Measure TCR-4:

Pre-Grade Meeting. The retained qualified archeologist and Consulting Tribe(s) representative shall attend the pre-grade meeting with the grading contractors to explain and coordinate the requirements of the monitoring plan.

63. Mitigation Measure TCR-5:

On-site Monitoring. During all ground-disturbing activities the qualified archaeologist and the Native American monitor shall be on-site full-time. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of Tribal Cultural Resources as defined in California Public Resources Code Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and the soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

64. Mitigation Measure TCR-6:

Inadvertent Discovery of Cultural Resources. In the event that previously unidentified cultural resources are unearthed during construction, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert and/or temporarily halt ground-disturbance operations in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed. If a potentially significant cultural resource(s) is discovered, work shall stop within a 60-foot perimeter of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. All work shall be diverted away from the vicinity of the find, so that the find can be evaluated by the qualified archaeologist and Tribal Monitor[s].

The archaeologist shall notify the Lead Agency and Consulting Tribe(s) of said discovery. The qualified archaeologist, in consultation with the Lead Agency, the Consulting Tribe(s), and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for the treatment and disposition of the Tribal Cultural Resource shall be made by the qualified archaeologist in consultation with the Tribe[s] and the Native American monitor[s] and be submitted to the Lead Agency for review and approval. Below are the possible treatments and dispositions of significant cultural resources in order of CEQA preference:

A. Full avoidance.

B. If avoidance is not feasible, Preservation in place.

C. If Preservation in place is not feasible, all items shall be reburied in an area away from any future impacts and reside in a permanent conservation easement or Deed Restriction.

D. If all other options are proven to be infeasible, data recovery through excavation and then curation in a Curation Facility that meets the Federal Curation Standards (CFR 79.1)

65. Mitigation Measure TCR-7:

Inadvertent Discovery of Human Remains. The Consulting Tribe(s) requests the following specific conditions to be imposed in order to protect Native American human remains and/or cremations. No photographs are to be taken except by the coroner, with written approval by the Consulting Tribe(s).

A. Should human remains and/or cremations be encountered on the surface or during any and all ground-disturbing activities (i.e., clearing, grubbing, tree and bush removal, grading, trenching, fence post placement and removal, construction excavation, excavation for all water supply, electrical, and irrigation lines, and landscaping phases of any kind), work in the immediate vicinity of the discovery shall immediately stop within a 100-foot perimeter of the discovery. The area shall be protected; project personnel/observers will be restricted. The County Coroner is to be contacted within 24 hours of discovery. The County Coroner has 48 hours to make his/her determination pursuant to State and Safety Code §7050.5. and Public Resources Code (PRC) § 5097.98.

B. In the event that the human remains and/or cremations are identified as Native American, the Coroner shall notify the Native American Heritage Commission within 24 hours of determination pursuant to subdivision (c) of HSC §7050.5.

C. The Native American Heritage Commission shall immediately notify the person or persons it believes to be the Most Likely Descendant (MLD). The MLD has 48 hours, upon being granted access to the Project site, to inspect the site of discovery and make his/her recommendation for final treatment and disposition, with appropriate dignity, of the remains and all associated grave goods pursuant to PRC §5097.98

D. If the Morongo Band of Mission Indians has been named the Most Likely Descendant (MLD), the Tribe may wish to rebury the human remains and/or cremation and sacred items in their place of discovery with no further disturbance where they will reside in perpetuity. The place(s) of reburial shall not be disclosed by any party and is exempt from the California Public Records Act (California Government Code § 6254[r]). Reburial location of human remains and/or cremations shall be determined by the Tribe's Most Likely Descendant (MLD), the landowner, and the City Planning Department.

66. Mitigation Measure TCR-8:

Final Report. The final report[s] created as a part of the Project (AMTP, isolate records, site records, survey reports, testing reports, etc.) shall be submitted to the City and Consulting Tribe(s) for review and comment. After approval of all parties, the final reports shall be submitted to the Eastern Information Center, and the Consulting Tribe(s).

Building Division

67. Building plans submitted for plan check shall consist of complete construction drawings including structural calculations, energy calculations and soils report to Building and Safety for plan review in accordance with the current edition of the California Building and Fire Codes including all local ordinances and standards which are effective at the time of Plan Check Submittal.

Facilities and Community Services Department

68. The City maintains a list of acceptable street trees by species, by street name, and by tree district, pursuant to RMC 12.52.050. Street trees for public streets adjacent to the project must be selected from this approved list.

69. Prior to issuance of any buildings permits for any building, the Developer shall prepare and submit a Trash Management Plan. The plan shall provide estimates of trash generation, estimates for the numbers and sizes of containers and facilities, schedule for City services, pertinent instructions for on-site maintenance staff (e.g., bins and containers shall not be placed on public streets and left unattended outdoors for more than two hours before or after trash service pick-up, bins and containers shall not be placed or staged in a manner that obstructs any vehicle travel lanes, etc.), and other necessary information as required by the City. The plan shall be subject to review and approval by

the Facilities & Community Services Department and the Development Services Department, and may be modified by the City after approval to mitigate any unanticipated impacts or public nuisance conditions.

a. Each building and building pad shall be designed to accommodate all necessary refuse storage rooms, bins and containers, hallways, access paths, and other structural elements to be completely screened or enclosed. Refuse and recycling storage rooms and all bins or containers shall be completely screened from view from any streets (when not placed outdoors for scheduled pick-up and hauling).

Fire Department

70. Fuels Management and Weed Abatement:

    a. From the present time until project construction phase, property owner is responsible to maintain compliance with Redlands Municipal Code Chapter 8.40 regarding Weed Abatement and Fuels Management.

    b. Weeds and annual grasses shall be maintained at a 4 inches of growth or less.

    c. Tumbleweeds and similar uncultivated vegetation shall be removed.

71. Gates shall be designed for emergency access, and incorporate Knox Rapid Access System, subject to approval by the Redlands Fire Department.

72. Fire Protection Plan: Prior to the issuance of building permits, a separate Fire Master Plan is required for submittal to the RFD. It shall be a site plan reflecting all the following fire department related items:

    a. Fire hydrant locations, public and private, as well as the associated fire flow compliance.
    b. FDC locations.
    c. Dimensions from FDC's to hydrants.
    d. DCDA locations.
    e. Fire sprinkler riser locations and location of system serving.
    f. FACP locations.
    g. Knox box and Knox switch locations.
    h. Gate locations.
    i. Fire lane locations, dimensions, lengths, turning radii at corners and circles/cul-de-sacs.
    j. Fire lane signage and striping.
    k. Property dimensions or accurate scale.
    l. Building locations and heights.
    m. Building addresses and suite addresses.
    n. Ground ladder access to emergency escape openings.

Other City Departments/Divisions:

73. Conditions of Approval from the following City Departments/Divisions are applicable to the project, and are hereby incorporated by reference:

    a. Land Use Engineering Division (Exhibit "B")

_____

Brian Desatnik
Development Services Director

EXHIBIT B

LAND USE ENGINEERING DIVISION
CONDITIONS OF APPROVAL
(Tentative Tract Map No. 20491 and Commission Review & Approval No. 942)

[Attached]

RESOLUTION NO. 8857

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS APPROVING AN AFFORDABLE HOUSING COVENANT AND REGULATORY AGREEMENT (DENSITY BONUS & INCLUSIONARY HOUSING AGREEMENT) FOR THE PROPOSED LUGONIA VILLAGE RESIDENTIAL PROJECT, LOCATED ON THE NORTH SIDE OF WEST LUGONIA AVENUE, SOUTH SIDE OF A PROPOSED EXTENSION OF PENNSYLVANIA AVENUE, AND WEST SIDE OF KARON STREET.

WHEREAS, Redlands Summit, LLC ("Applicant"), has filed an application for a Density Bonus Agreement and Inclusionary Housing Plan for a proposed multi-family and single-family residential development with a total of 541 dwelling units on three parcels located at north side of Lugonia Avenue, south side of a proposed extension of Pennsylvania Avenue, and west side of Karon Street (APNs: 0167-171-04-0000, 0167-171-05-0000, and 0167-171-06-0000); and

WHEREAS, the Applicant has filed concurrent applications for General Plan Amendment No. 143, Amendment No. 48 to Specific Plan No. 40 (East Valley Corridor Specific Plan), Zone Change No. 469, Tentative Parcel Map No. 20469, Tentative Tract Map No. 20490 and No. 20491, and Commission Review & Approval Nos. 940, 941, and 942 for a residential development located on the north side of West Lugonia Avenue, south side of Pennsylvania Avenue, and west side of Karon Street (the "Project"); and

WHEREAS, the Applicant has submitted an Inclusionary Housing Plan in accordance with Redlands Municipal Code Chapter 18.230 (Inclusionary Housing) and proposes to fulfill the inclusionary housing requirements by providing twenty-eight (28) very low-income affordable housing units within the project; and

WHEREAS, the California Legislature has consistently recognized the continuing need for new housing units and affordable housing in California, stating in Government Code Section 65580, that "the availability of housing is of vital statewide importance, and the early attainment of decent housing… is a priority of the highest order" and, further, that, "local… governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community"; and

WHEREAS, the City of Redlands adopted its 6th Cycle Housing Element (the 2021-2029 Housing Element) on October 4, 2022, the City will implement numerous policies and programs as outlined in the 2021-2029 Housing Element, and the City intends to rezone certain parcels identified in the Housing Sites Inventory List to accommodate future high-density housing including housing affordable to lower-income households; and

WHEREAS, the Housing Sites Inventory List contained in the City's 2021-2029 Housing Element includes two parcels (APNs 0167-171-04-0000 and 0167-171-05-0000) within the proposed project site that are to be rezoned for future housing projects; and

WHEREAS, the proposed Project is consistent with the 2021-2029 Housing Element, and approval of the requested Agreement pertaining to the density bonus and inclusionary housing requirement is necessary to achieve consistency with the 2021-2029 Housing Element and goals contained therein; and

WHEREAS, on January 23, 2024, the Planning Commission recommended to the City Council that the Density Bonus and Inclusionary Housing Agreement be approved; and

WHEREAS, on or about February 23, 2024, notice of the City Council's public hearing for the Project, including the Density Bonus and Inclusionary Housing Agreement, was published in the Redlands Daily Facts by the City Clerk; and

WHEREAS, the City Council held a duly noticed public hearing on March 5, 2024, at which interested persons had the opportunity to provide verbal and written testimony on the Project, including the proposed Density Bonus and Inclusionary Housing Agreement; and

WHEREAS, following the public hearing on March 5, 2024, the City Council determined that approval of the proposal is in the best interests of the public health, safety, and general welfare.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. Approval of Density Bonus and Inclusionary Housing Agreement. The proposed density bonus and inclusionary housing agreement for the Lugonia Village Project ("Affordable Housing Covenant and Regulatory Agreement") is hereby approved subject to the agreement attached hereto as Exhibit "A" and based upon the following findings:

1. *The development project would not be a hazard or nuisance to the city at large or establish a use or development inconsistent with the goals and policies of the city's general plan.*

The proposed project for 541 dwelling units will not be a hazard or nuisance to the City of Redlands at large. The proposed project and land use will be consistent with several policies and actions contained in the General Plan. The proposed project will also implement several goals and policies contained in the 2021-2029 Housing Element, particularly for increased density for sites identified in the Housing Sites Inventory and affordable housing. The proposed project will help the City achieve its housing goal numbers as determined by the Regional Housing Needs Assessment as further explained in the Housing Element.

2. The number of dwellings can be accommodated by existing and planned infrastructure capacities.

The proposed project for 541 dwelling units can be accommodated by existing and planned infrastructure capacities. The City's Development Review Committee (including Land Use Engineering staff and Municipal Utilities & Engineering Department) have reviewed the proposed project plans, and all necessary infrastructure, public and private utilities, and public services will be able to adequately serve the project site and vicinity.

3. Adequate evidence exists to ensure that the development of the property would result in the provision of affordable housing in a manner consistent with the purpose and intent of this chapter;

The proposed project for 541 dwelling units is consistent with the applicable provisions of State density bonus law (Calif. Gov. Code Sections 65915 – 65918) and the project is subject to a Density Bonus Agreement that is included in the project entitlements. The development of the property will result in the provision of 28 affordable housing units for very-low-income households in a manner consistent with the purpose and intent of the Redlands Municipal Code as well as applicable State law.

4. In the event that the city does not grant at least one financial concession or incentive as defined in state law in addition to the density bonus, that additional concessions or incentives are not necessary to ensure affordable housing costs; and

The proposed project for 541 dwelling units does not require any financial concessions or incentives from the City. There are no additional concessions or incentives that will be necessary to ensure affordable housing costs. The proposed Density Bonus Agreement will ensure that the project provides housing for very-low-income households in accordance with State law.

5. There are sufficient provisions to guarantee that the lower and very low income units would remain affordable in the future.

The proposed project for 541 dwelling units includes a Density Bonus Agreement that will ensure the project provides housing for very-low-income households in accordance with the granted density bonus and applicable State law. The Density Bonus Agreement includes terms and provisions to ensure that only eligible very-low-income residents may reside in the affordable housing units within the development and have the benefit of affordable rents.

Section 2. Effective Date. This Resolution shall become effective upon adoption.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2024.

_____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, do hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2024, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

EXHIBIT A

Affordable Housing Covenant and Regulatory Agreement
Proposed "Lugonia Village" Housing Development

[Attached]

City Council/Successor Agency Meeting **L. 1.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Consideration of Resolution No. 8550, a requirement of the San Bernardino County Transportation Authority, Transportation Development Act Article 3 Guidelines for acceptance of the $1,282,000 Bicycle and Pedestrian Facilities Program grant; the 15% local match from Public Benefit Trails Reserve funds; the additional appropriation of $1,089,700; and determination that these actions are exempt from environmental review pursuant to Sections 15061(b)(3) and 15301(c) of the State's Guidelines implementing the California Environmental Quality Act (Municipal Utilities and Engineering Director Harris)

MOTION(S):

If City Council determines the staff recommendation is appropriate, the following motions are provided:

1. I move that City Council determine adoption of Resolution No. 8550 and acceptance of a Transportation Development Act, Article 3 Bicycle and Pedestrian Facilities Program grant are exempt from environmental review pursuant to Sections 15061(b)(3) and 15301(c) of the State's Guidelines implementing the California Environmental Quality Act;
2. Further, I move that City Council adopt Resolution No. 8550, accept the Transportation Development Act Article 3 Bicycle and Pedestrian Facilities Program grant, approve use of the Public Benefit Trails Reserve to match funds, and an additional appropriation of $1,089,700.

RECOMMENDATION:

Staff recommends City Council determine adoption of Resolution No. 8550 and acceptance of the Transportation Development Act (TDA), Article 3 Bicycle and Pedestrian Facilities Program grant are exempt from environmental review under Sections 15061(b)(3) and 15301(c) of the guidelines implementing the California Environmental Quality Act. Staff further recommends City Council approve Resolution No. 8550 authorizing the filing of the Claim Form, the

submission of the Reimbursement Request Form(s), and designating the individual authorized to certify project completion for the TDA grant, accept the TDA grant in the amount of $1,282,000, which requires fifteen percent (15%) in local matching funds, approve the use of the Public Benefit Trails Reserve to fund the local match, and approve an additional appropriation of $1,089,700.

DISCUSSION:

In July 2023, the City of Redlands (City) submitted an application for supplemental funding through the Transportation Development Act (TDA) Article 3 grant program for construction of the Orange Blossom Trail (OBT) Phase IV Project (Project), which will construct the last remaining OBT segment on the west side of Redlands. In October 2023, MUED staff received a notice of award for $1,089,700 in grant funding, which requires $192,300 (15%) in local matching funds for a total project cost of $1,282,000. There is sufficient funding in the Public Benefit Trails Reserve to fund the local match.

The TDA Program Guidelines adopted by the SBCTA Board of Directors in June 2021 requires recipients of TDA Article 3 funding to adopt a resolution authorizing the filing of the Claim Form, the submission of Reimbursement Request Form(s), and designating the individuals authorized to certify project completion within six (6) months of the funding award notification. In accordance with Section 2.2.3, Post Award Grant Administration of the City's Policy Manual, MUED staff recommends that City Council accept the grant funds. MUED staff will manage all Project elements, including grant administration, and will ensure compliance with City policies and grant requirements.

Adoption of Resolution No. 8550 and acceptance of the TDA grant funds are exempt from environmental review pursuant to Section 15061(b)(3) and Section 15301(c) of the State's Guidelines implementing the California Environmental Quality Act as there is no possibility this action will result in an impact on the environment.

ALTERNATIVES:

City Council may decline the approval of Resolution No. 8550 and acceptance of the TDA grant.

STRATEGIC PLAN:

N/A

SUBMITTED BY:
John R. Harris, Municipal Utilities and Engineering Director

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Yvette M. Abich Garcia, City Attorney
Janice McConnell, Assistant City Manager
Danielle Garcia, Management Services/Finance Director
Goutam K. Dobey, City Engineer

PREPARED BY:
Veronica Medina, Associate Engineer

Fiscal Impact

Fiscal Year:	FY 23/24
Appropriation Required Y/N:	Yes
Amount:	$1,089,700
Budgeted Y/N:	No
Account No.:	241400; 101400

Discussion:

The recommended Council action requires an additional appropriation of $1,089,700 from the Transportation Development Act Fund (241), which will be reimbursed by the TDA grant. MUED staff also recommends an additional appropriation of $192,300 from the Public Benefit Trails Reserve (proceeds from the sale of Nevada Palmetto Grove) to fund the local match requirement.

Attachments

A. Resolution No. 8550
B. Additional Appropriation Form
C. Grant Award Letter
D. Location Map

RESOLUTION NO. 8550

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS, CALIFORNIA, AUTHORIZING SUBMITTAL OF A CLAIM TO THE SAN BERNARDINO COUNTY TRANSPORTATION AUTHORITY FOR TRANSPORTATION DEVELOPMENT ACT ARTICLE 3 FUNDS FOR 2023 TDA ARTICLE 3 ORANGE BLOSSOM TRAIL PHASE IV PROJECT

WHEREAS, the Mills-Alquist-Deddeh Act (SB 325) was enacted by the California Legislature to improve existing public transportation services and encourage regional transportation coordination. Known as the Transportation Development Act (TDA) of 1971, this law provides funding to be allocated to transit and non-transit related purposes that comply with regional transportation plans; and

WHEREAS, TDA provides two funding sources, the Local Transportation Fund (LTF) and State Transit Assistance fund (STA); and

WHEREAS, LTF is derived from a ¼ cent of the general sales tax collected statewide and apportioned by population to areas within the county; and

WHEREAS, STA is derived from the statewide sales tax on diesel fuel, plus an additional vehicle registration fee authorized under Senate Bill 1, referred to as the State of Good Repair, and both are apportioned by the State Controller's Office 50% by population and 50% by transit operator revenues; and

WHEREAS, the San Bernardino County Transportation Authority (SBCTA) authorizes funding for a wide variety of transportation programs in San Bernardino County, including planning and program activities, pedestrian and bicycle facilities, community transit services, public transportation, and bus and rail projects to local transportation agencies through annual apportionment and allocation processes, and approves payments periodically throughout the year; and

WHEREAS, SBCTA awarded City of Redlands TDA Article 3 grant funds in the amount of $1,089,700 for development of the 2023 TDA Article 3 Orange Blossom Trail Phase IV Project within the City of Redlands jurisdiction through a competitive "Call for Projects"; and

WHEREAS, TDA Article 3 grant funds are provided on a reimbursement basis; and

WHEREAS, SBCTA requires City of Redlands to submit a claim and request(s) for reimbursement; and

WHEREAS, submittal of the claim for TDA Article 3 funds must be first authorized by the City Council; and

WHEREAS, the 2023 TDA Article 3 Orange Blossom Trail Phase IV Project award is over $200,000, and is eligible for progress reimbursement, or under, and eligible for reimbursement at project completion; and

WHEREAS, SBCTA requires the designation of individuals authorized to certify Project completion; and

WHEREAS, City Manager, or his/her designee, is authorized to certify project completion, and

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Redlands as follows:

Section 1. Authorizes submittal of a claim and request for reimbursement(s) for TDA Article 3 funds for the 2023 TDA Article 3 Orange Blossom Trail Phase IV Project in the amount of $1,089,700; and

Section 2. Authorizes that the City Manager, or his/her designee, is authorized to certify project completion.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2023.

_____
Eddie Tejeda, Mayor

ATTEST:

_____
Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, hereby certify that the foregoing resolution was duly adopted by the City Council at a regular meeting thereof held on the 5th day of March, 2023, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Jeanne Donaldson, City Clerk

CITY OF REDLANDS
REQUEST FOR ADDITIONAL APPROPRIATION

DATE OF REQUEST: 2/1/2024

FINANCE USE ONLY
TRANSACTION NO:
ACCOUNTING PERIOD:

An additional appropriation is hereby requested as follows:

Department: MUED

EXPENDITURE APPROPRIATION INCREASE (if applicable)

Account Description	Orgkey	Object Code	Job Ledger (If applicable)	Amount
Other Infrastructure	241400	8405	S241006	1,232,000
Other Professional Services	241400	6106	S241006	50,000
Reimbursed Expenditure	241400	6912	S241006	-192,300
Reimb. Exp. (Public Benefit Trails Reserve)	101400	6912	S241006	192,300
				$ 1,282,000 -

REVENUE APPROPRIATION INCREASE (if applicable)

Account Description	Orgkey	Object Code	Job Ledger (If applicable)	Amount
State Grants	241400	4401	S241006	1,089,700
				$ 1,089,700 -

JUSTIFICATION: The TDA Article 3 Bicycle and Pedestrian Facilities Program grant was recently awarded to the City or the Orange Blossom Trail Phase IV (Project) and is going to City Council for acceptance. The Project was not budgeted in FY23/24. The grant requires a 15% match to be funded by the Public Benefit Trails Reserve (proceeds from the sale of Nevada Palmetto Grove).

Requested By: John R. Harris
Department Head

Recommended By Finance Director:

Yes _____ No _____ Signed _____

Comments: _____

Recommended: _____
City Manager

Approved by City Council:

Date: _____

Signed: _____
City Clerk

October 13, 2023

Veronica Medina
Transmitted via email to: vmedina@cityofredlands.org

Re: 2023 TDA Article 3 Award – Orange Blossom Trail Phase IV

Dear Veronica Medina,

It is our pleasure to inform you that on October 4, 2023, the San Bernardino County Transportation Authority (SBCTA) Board of Directors (Board) approved funding in the amount of $1,089,700 from the Transportation Development Act (TDA) Article 3 Bicycle and Pedestrian Facilities Program for the Orange Blossom Trail Phase IV Project. The SBCTA Board set the period of time for completion of your project to comply with TDA provisions, therefore this project must be completed by **June 30, 2027**.

Please note the following important funding requirements:

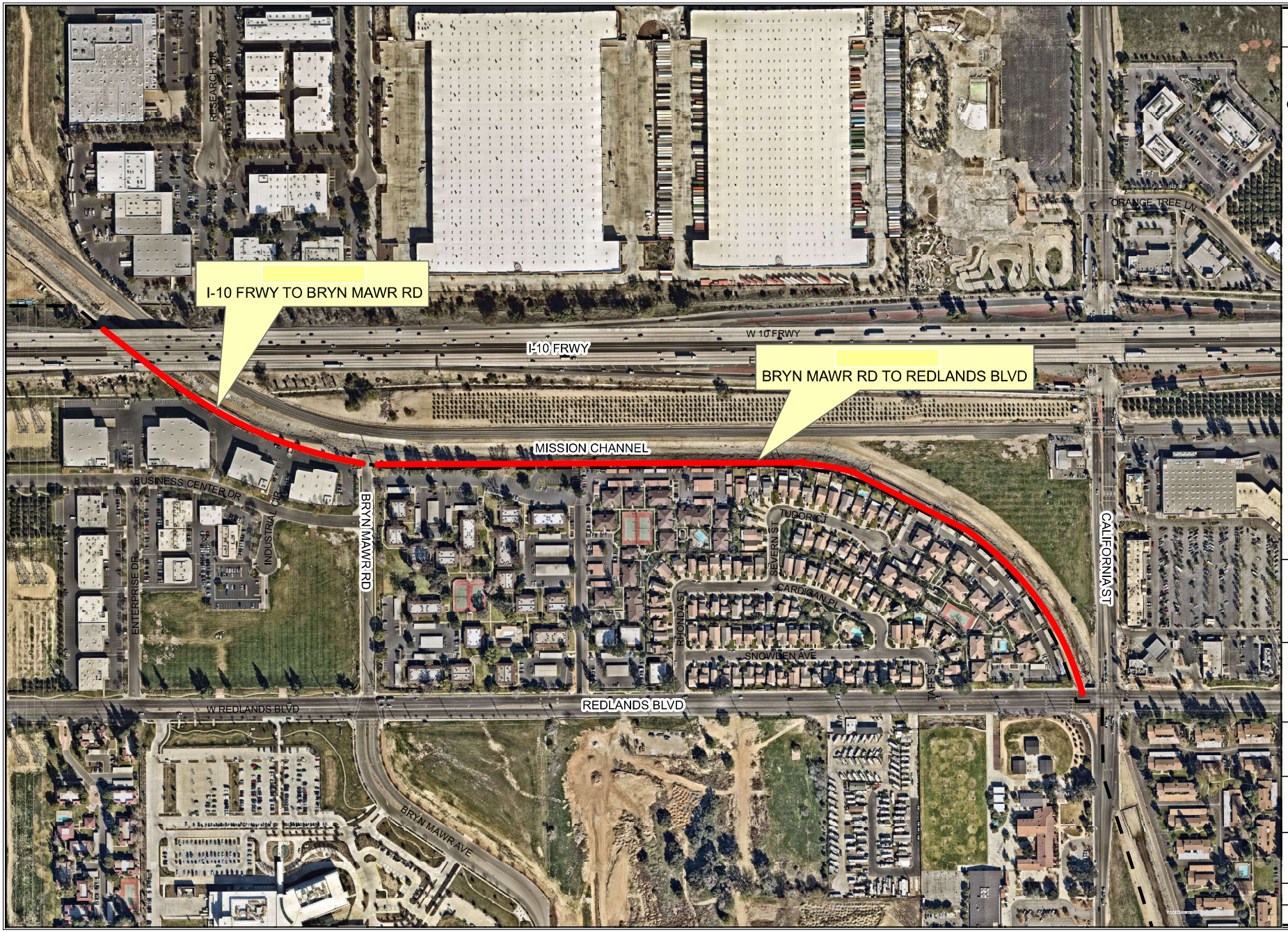
- A (1) signed Claim Form and (2) and Authorizing Resolution Authorized Resolution must be submitted within **six** months (by **April 4, 2024**) of project award notification, or prior to requesting reimbursement of funds, whichever comes first. A sample resolution can be found at www.gosbcta.com/tda3 under the *Claims* section.
- Completion of an Annual Proof of Progress Report (Annual Report) must be submitted on the FIRST anniversary of award notification AND by June 30 for all subsequent years thereafter. The annual report must include:
  - A description of the work completed during the year,
  - An estimate of the total project percent completed, and
  - An estimate of the amount spent to-date.
- Funds will be rescinded if no progress has been made within **ONE** year of award notification or if, where appropriate, a construction contract has not yet been awarded within **THREE** years of award notification.

Additionally, the TDA Article 3 award is paid through a reimbursement process. The award is for a maximum reimbursable amount. Should your project exceed the maximum reimbursable amount, SBCTA will not provide any additional reimbursement. For projects completed under the awarded amount, the local match percentage of 15% ($192,300) as identified in your grant application will apply to the adjusted total. Sponsor agencies receiving an allocation of $200,000 or less shall be reimbursed in arrears and upon proof of satisfactory project completion. Agencies receiving an allocation of $200,000 or more may request progress payments for a minimum of 20% of the award total; however, 20% of the awarded funds shall be held by SBCTA until proof of satisfactory project completion.

Congratulations on submitting a successful grant application. We look forward to the timely completion of your project. Should you have any questions please contact me at (909) 884-8276 or gkoblasz@gosbcta.com.

Sincerely,

Ginger Koblasz
Senior Planner



LOCATION MAP

ORANGE BLOSSOM TRAIL
PHASE 4

Project Location

City Bounary

This map was produced by the City of Redlands, Geographic Information System.
The City of Redlands assumes no warranty or legal responsibility for the information contained on this map.
The data used to generate this map is dynamic in nature, therefore the information shown may or may not be the most current.

N
W E
S

Scale
0 250 500
Feet

City of Redlands
Department of Innovation & Technology
Geographic Information Systems

City of Redlands "A City That Works"

OneStop.mxd

City Council/Successor Agency Meeting **L. 2.**

DATE: 03/05/2024

TO: Honorable Mayor and City Council Members

SUBJECT: Consideration of Resolution No. 8560 accepting the dedication of 1.66 acres of parkland from MLC Holdings, Inc., the future reimbursement of $463,312.98 in Park and Open Space Development Impact Fees associated with Tentative Tract Map 20528, and determine that the project is exempt from environmental review pursuant to Section 15061(b)(3) of the State's guidelines implementing the California Environmental Quality Act (Facilities and Community Services Director Crocker)

MOTION(S):

If the City Council determines that the recommendations are appropriate, the following motion is provided:

I move to adopt Resolution No. 8560.

RECOMMENDATION:

On December 14, 2023 the Parks and Recreation Advisory Commission (Commission) reviewed the request by MLC Holdings, Inc. and recommended that the City Council adopt Resolution No. 8560, accepting the dedication of 1.66 acres of parklands and future reimbursement to the dedicating entity, $463,312.98 of Park and Open Space Development Impact Fees associated with Tentative Tract Map 20528, upon successful completion of the project and City acceptance.

DISCUSSION:

MLC Holdings, Inc. wishes to dedicate parkland to the City and receive credit in place of paying developmental impact fees associated with a current housing project. Development impact fees are a one-time charge to new development imposed under the Mitigation Fee Act. These fees are charged to new development to mitigate impacts resulting from the development activity.

Resolution No. 8109 establishes policies and procedures for the voluntary dedication of open space and parkland, in accordance with 17.15 of the Redlands Municipal Code relating to open space and park fees. Resolution No. 8109 requires the Parks and Recreation Advisory Commission (Commission) to make a recommendation to the City Council on the request to dedicate, prior to the City Council's consideration of the request.

On December 14, 2023, the Commission unanimously approved a recommendation that City Council accept the dedication of parkland and improvements as represented by MLC Holdings, LLC, and issue a reimbursement of the Park and Open Space development impact fees equivalent to what is otherwise owed for the project, estimated to be $463,312.98.

MLC Holdings, Inc. is currently processing plans for a 117-unit single-family development located on approximately 15 acres north of Pioneer Ave, south of Domestic Avenue and east of the 210 Freeway. MLC Holdings, Inc. representatives contacted City staff and sought input regarding the City's recreational needs in the early stages of project planning. Through several meetings, staff provided MLC Holdings, Inc. with a list of desired amenities to meet the high demand for sports fields within the city. The project proposes incorporating additional parking to support the previously approved Bergamot Park development, to support active sports fields, recreational facilities, and a passive nature area.

The Sports Park is currently being designed as part of the Live Oak Community in District 2, northwest of Citrus Valley High School, and includes 72 spaces. The redesign and extension would result in approximately 84 additional parking spaces for a total of approximately 156 spaces (including 8 ADA spaces). Providing these additional spaces would allow the Sports Park to accommodate Junior All-American Football as well as a greater number of soccer teams, while reducing the number of vehicles parked on neighboring streets. This revised design would be proposed as part of the Final Map and would involve reconfiguration of the stormwater basin, relocation of two homes to the southern portion of the subdivision, redesigning the parking lot at the Sports Park to create a direct vehicular connection to Lot F, and the extension of a two-way drive aisle with angled parking spaces into Lot F from the Sports Park to Pioneer Avenue as illustrated in Attachment A. The Santa Ana River Trail would remain

and would run adjacent to the parking lot along the westerly property line of the property. Trees in tree wells and lighting would be provided between the trail and the parking area, providing pedestrian and bicycle access to the park. The 8-foot sound wall separating new homes from Lot F will also remain and the slope between the pavement and the wall will be landscaped to soften the visual appearance of the wall. A driveway will be provided to the City's well site to ensure continued access. These revisions would be considered in substantial conformance with the approved Tentative Tract Map and provide the following:

- Parking
- Linear Park
- Staging Area
- Public Trail

Project Costs/Park Fee Credits

The developer would typically pay the City a Park and Open Space Impact Fee of $3,959.94 per single-family dwelling unit at the time of issuance of a single-family house building permit. Thus, with 117 single-family dwelling units, the project is required to pay a total of $463,312.98 in park fees. These fees would be placed into an account and held for later use by the City towards unspecified park expansion or improvements if credit is not issued. The developer's estimated cost of the park improvements, less the land value, is $661,227.00. The proposed Park Improvement and Dedication Agreement between the developer and the City would include waiving the development impact fees, which are less than the proposed park improvements.

By dedicating the parkland to the city and foregoing impact fees, the developer contributes a substantial value of $463,312.98 towards park development. This not only aligns with responsible urban planning but also facilitates a collaborative approach to enhancing the city's recreational spaces. Furthermore, the estimated cost of the park improvements, totaling $661,227.00, outweighs the impact fees, offering a clear fiscal advantage. This strategic arrangement fosters a win-win scenario, wherein the city gains valuable parkland and improvements, while the developer efficiently allocates resources for a mutually beneficial outcome.

If this resolution is approved, the applicant will seek approval for a revision to its approved tentative map to incorporate the new parking area. The City's review of the amendment to the tentative map will also include the applicable environmental review in accordance with CEQA. The adoption of Resolution No. 8560 is not subject to the California Environmental Quality Act (CEQA) in accordance with Section 15061(b)(3) because the activity only involves the possible future acceptance of fee title of real property associated with a development project which will undergo comprehensive environmental review before approval and before there is any action taken by the City with respect to the matter addressed in this report, and will not result in direct or reasonably foreseeable indirect physical change in the environment. The

associated development project is subject to separate, future environmental review in accordance with CEQA.

ALTERNATIVES:

City Council could choose to accept the development impact fees required for this project in lieu of accepting the 1.66 acres of parkland and improvements.

STRATEGIC PLAN:

Focus Area C - Infrastructure

SUBMITTED BY:
Tabitha Crocker, Facilities and Community Services Department Director

RECOMMENDED BY:
Charles M. Duggan Jr., City Manager

REVIEWED BY:
Yvette M. Abich Garcia, City Attorney
Janice McConnell, Assistant City Manager
Christopher Boatman, Assistant City Manager
Danielle Garcia, Management Services/Finance Director
Brian Desatnik, Development Services Director

PREPARED BY:
Salomon Abdel-Aziz, Management Analyst

Fiscal Impact

Fiscal Year:	FY 2023-24
Revenue Generating:	No
Appropriation Required Y/N:	N
Budgeted Y/N:	N

Discussion:

In accordance with the provisions of Resolution No. 8109, the $463,312.98 in development impact fees will be collected and placed into a deposit account. Upon successful completion of the project and with City acceptance, $463,312.98 will be reimbursed from the deposit account.

Attachments

TTM No. 20528
Cost Estimate
Ordinance 2912
Resolution 8109
Resolution 8560 Park Dedication Acceptance TTM No. 20528

Exhibit A

TREE FOR BERGAMOT PARKING LOT
PER SEPARATE LANDSCAPE PLANS

Parking Lot A
- Currently designed with 72 parking spaces
- Redesigned to include 76 spaces

Water Quality Basin
- Reconfigured to allow driveway connection to Lot F
- HOA owned and maintained

Connection to
Pioneer Avenue

BERGAMOT CITY PARK SPORTS FIELD

DOMESTIC AVENUE
(EXISTING - PUBLIC)

STREET B
(PUBLIC)

PIONEER AVENUE
(EXISTING - PUBLIC)

FOOTHILL FREEWAY (HWY 210)

CITY'S WELL PARCEL

Lot F
- 80 Angled Parking Spaces
- Two-way Drive Aisle
- Connects to Pioneer Avenue
-1.66 Acres Total

Santa Ana Trail
- 10-12 foot multi-use trail
- Enhanced with lighting and trees
in tree-wells

Well Access

LEGEND

1. CONCRETE MOW CURB
2. LOT I - BASIN
3. TRASH RECEPTACLE AND PET WASTE STATION
4. 12-FOOT WIDE (MAX) TRAIL
5. LIGHT FIXTURES (FINAL LOCATIONS PER ELECTRICAL ENGINEER)

Total Parking: 156 Spaces

PIONEER / BERGAMOT PARKING LOT EXHIBIT

PIONEER AVENUE - TTM NO. 20528

REDLANDS, CA

0 40 80 120 160 feet

SCALE: 1" = 40'

MLC HOLDINGS, INC. 5 Peters Canyon Road, Suite 310, Irvine, CA 92606 Phone: 949 - 299 - 3847 Contact: Johanna Crooker

BGB | DESIGN GROUP
Landscape Architecture Planning Urban Design
3185 C1 Airway Avenue Costa Mesa, CA 92626
O: 714 545 2898 F: 714 545 2878 bgb-inc.com

L-1

11/15/2023

Exhibit B: Cost Estimate

Pioneer - City Parking Lot

LAND DEVELOPMENT BUDGET

Meritage Homes:	**Southern California**
Prepared by:	**LD Earthwork Services LLC**
Date:	**November 14th, 2023**
Plan Set Title:	**Tentative Tract Map No. 20528 Pioneer / Bergamot Parking**
Plan Date:	**November 9, 2023**
Design Firm:	**BGB Design Group**
Municipality:	**Redlands**
Lot F Acres:	**TBD**

Parking Lot	Unit	Quantity	Price/Unit	Total
3" AC over 6" Aggregate Base (Base Pave)	SF	47,595	$ 2.85	$ 135,646
Cap Paving	SF	47,595	$ 0.85	$ 135,646
Construct 6" Curb Only	LF	3,105	$ 25.00	$ 77,625
Construct Mow Curb	LF	1,165	$ 22.00	$ 25,630
Subgrade Prep - Curb and Gutter	SF	3,105	$ 2.50	$ 7,763
Sidewalk - W=10'	SF	10,790	$ 9.00	$ 97,110
Construct Commercial Drive Approach	SF	1,411	$ 6.75	$ 9,524
Paseo Landscape & Irrigation	SF	17,485	$ 6.00	$ 104,910
24" Box Trees	EA	39	$ 425.00	$ 16,575
Trash Receptacle & Pet Waste Station	EA	2	$ 500.00	$ 1,000
Drainage (Allowance)	LS	1	$ 15,000.00	$ 15,000
Site Lighting (Assumed Bollards)	EA	15	$ 2,250.00	$ 33,750
Landscape Maintenance - Assumes 6 months	SF	17,485	$ 0.06	$ 1,049
Total				**$ 661,227**

ORDINANCE NO. 2912

AN ORDINANCE OF THE CITY OF REDLANDS AMENDING CHAPTER 3.32 OF THE REDLANDS MUNICIPAL CODE RELATING TO OPEN SPACE AND PARK FEES

WHEREAS, -----

THE CITY COUNCIL OF THE CITY OF REDLANDS DOES ORDAIN AS FOLLOWS:

Section 1. Chapter 3.32, titled "Open Space and Park Fees," is hereby amended to the Redlands Municipal Code to read as follows:

"CHAPTER 3.32
OPEN SPACE AND PARK FEES

SECTION:

3.32.010: Purpose
3.32.020: Definitions
3.32.030: Compliance with Chapter
3.32.040: Fee Imposition

3.32.050: Determination and Payment
3.32.060: Adjustment of Fee

3.32.010: PURPOSE:

It is the purpose and intent of this chapter to implement the Redlands general plan to ensure that open space lands and active and passive parks are made available to the public concurrent with the need for such lands and parks caused by new development within the city. The fees established pursuant to this chapter shall be imposed as a condition of approval of new residential, commercial, and office and industrial development to pay for the costs incurred by the city for acquiring, developing, improving and expanding open space areas, scenic drives, parks, playgrounds and recreational facilities to meet the increased needs for those facilities resulting from the effects of new development.

3.32.020: DEFINITIONS:

The definitions set forth in this section govern the construction of this chapter:

become due and payable to the city at the time of issuance of a building permit for a single-family residence, mobile home space, multi-family unit, or commercial, office or industrial development.

3.32.060: ADJUSTMENT OF FEE:

On July 1 of each fiscal year, the city's finance director, in coordination with the city's Facilities and Community Services Director, shall make annual adjustments to the specific amounts of open space and parks fees adopted by resolution of the city council by a percentage equal to the percentage change in the construction cost index of the "Engineering News-Record" twenty (20) cities annual average for the preceding twelve (12) month period. The purpose of this adjustment is to offset the effects of inflation related construction cost increases or any deflation related decreases. If this index should cease publication, the finance director shall use any appropriate official index published by the bureau of labor statistics, or similar agency as may then exist or may then be most nearly equivalent thereto. Land costs shall also be evaluated annually and adjusted as necessary based on the current market conditions at the time."

Section 2. That the City Council hereby finds and determines that the adoption of this ordinance is exempt from review under the California Environmental Quality Act ("CEQA") pursuant to section 15061(b)(3) of the State Guidelines implementing CEQA.

Section 4. The Mayor shall sign this ordinance and the City Clerk shall certify to the adoption of this ordinance and shall cause it, or a summary of it, to be published once in the Redlands Daily Facts, a newspaper of general circulation within the City, and thereafter, this ordinance shall take effect as provided by law.

Paul W. Foster, Mayor

ATTEST:

Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, hereby certify that the foregoing ordinance was duly adopted by the City Council at a regular meeting thereof held on the 21st day of July, 2020, by the following vote:

AYES: Councilmembers Tejeda, Momberger, Davis; Mayor Foster
NOES: None
ABSENT: Councilmember Barich
ABSTAINED: None

Jeanne Donaldson, City Clerk

RESOLUTION NO. 8109

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS ESTABLISHING A POLICY AND PROCEDURE FOR CONSIDERATION OF VOLUNTARY OFFERS OF DEDICATION OF OPEN SPACE AND PARK LANDS ASSOCIATED WITH DEVELOPMENT PROJECTS

WHEREAS, the purpose of this resolution is to establish a policy and process whereby the City Council will consider voluntary offers of dedication of open space or park lands by applicants for development projects; and

WHEREAS, this City Council recognizes that acceptance of voluntary dedications of open space and park lands by applicants for development projects may be beneficial for the City, when such dedications satisfy a City-identified community and/or recreational need; and

WHEREAS, this City Council further acknowledges that the City's acceptance of voluntary open space and park land dedications requires the subsequent commitment of additional City resources to maintain and administer such lands; therefore necessitating the careful consideration of anticipated costs and benefits; and

WHEREAS, in connection with such voluntary dedications of open space and park lands, the applicant may request a credited amount of funds towards development impact fees owed which, if such funds are credited, could have otherwise been used to construct other public parks and amenities with the City; and

WHEREAS, this policy will establish uniform criteria and procedures to guide applicants for development project regarding the City Council's consideration of such voluntary offers of dedications;

NOW, THEREFORE, be it resolved by the City Council of the City of Redlands as follows:

Section 1. It is the policy of this City Council that open space and park lands proposed within development projects, and parkways and interior landscaped areas, remain private, and be maintained by the private sector.

Section 2. The City has no obligation to accept any voluntary dedication of open space or park lands. The City may, in its sole discretion and for any reason, or no reason, decline any voluntary offer of dedication.

Section 3. When voluntary dedications of lands are offered to the City, the applicant shall demonstrate that the lands, and any associated improvements, will satisfy an existing community and/or recreational need of the City, and are consistent with Chapter 7.2 of the City of Redlands General Plan, titled, "Parks and Recreational Open Space policies." In addition, the following design guidelines when considering making voluntary offers dedications:

A. Open space areas and park lands should abut the exterior boundary of the development project, formed by a street with a minimum designation of "collector."

B. Open space areas and park lands should include active recreational amenities, such as sports courts, playground facilities, sports fields, covered picnic areas, recreational trails and public restroom facilities. The provision of sports field lighting is encouraged.

C. Open space and park land amenities included in the development project and offered for voluntary dedication must be in substantial conformance with similar improvements owned and operated by the City.

D. Applicants for development project may request a credit of the open space and parks fee associated with a proposed dedication of open space or park land. However, such request is limited to the following:

(i) Any fee credit allowed shall not exceed the amount of the open space and parks fees otherwise paid for the project.
(ii) The amount of the credit is negotiable, and shall be evidenced by written documentation. Such documentation may include, but is not limited to, a construction estimate provided by a licensed engineer, vendor price quotes, and land value appraisals by a licensed appraiser.
(iii) The open space and park fees shall be paid prior to any acceptance of the dedication, and shall not be credited until after such dedication occurs and any associated improvements are accepted by the City.

Section 4.

A. Any applicant making a voluntary offer of dedication associated with a development project shall submit such offer concurrent with the submittal of the application for a development project. City staff may establish submittal requirements to meet the requirements of this resolution.

B. Prior to a development application being deemed complete in accordance with Government Code section 65920, the voluntary offer of dedication of open space or park lands will be considered by the City Council. The City will review such request in conformance with the time limits imposed by the Permit Streamlining Act (Government Code section 65920 et seq.), the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.), and all applicable law.

C. The applicant must demonstrate that the improvements in the open space area proposed to be dedicated meet an existing recreational need of the City.

D. The Parks and Recreation Advisory Commission shall make a recommendation to the City Council on the request to dedicate, prior to the City Council consideration of the request.

E. Staff will prepare and present to the City Council a report with a comparative analysis of the value of the improved common open space as compared to the open space and park fees otherwise received, and the estimated on-going maintenance cost of the open space. This report will be paid for by the applicant.

F. After considering the applicant's request, the City Council may approve or deny the request to dedicate the open space area or park lands. If the request is approved, the City Council may also make a determination on any request for a credit towards open space and park fees.

G. After the City Council considers the request, the application shall be revised, if necessary, to reflect the determination made by the City Council.

H. If the request to dedicate open space or park lands is approved, the applicant shall pay the applicable open space and park fees in accordance with the Redlands Municipal Code prior to final map recordation. If the City Council determines that a credit should be issued, such credit will be issued at the time of acceptance of the common open space by the City.

Section 5. Effective Date. This Resolution shall become effective upon the effective date of Ordinance No. 2912.

ADOPTED, SIGNED AND APPROVED this 7th day of July, 2020.

Paul W. Foster, Mayor

ATTEST:

Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, hereby certify that the foregoing resolution was duly adopted by the City Council at a regular meeting thereof held on the 7th day of July, 2020.

AYES:	Councilmembers Barich, Tejeda, Momberger, Davis; Mayor Foster
NOES:	None
ABSTAIN:	None
ABSENT:	None:

Jeanne Donaldson, City Clerk

RESOLUTION NO. 8560

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS AUTHORIZING THE ACCEPTANCE OF THE PROPOSED DEDICATION OF IMPROVED PARKLANDS WITHIN TENTATIVE TRACT MAP NO. 20528

WHEREAS, the Project proposes to include improved parklands consisting of incorporating additional parking to support the previously approved Bergamot Park development, to support active sports fields, recreational facilities, and a passive nature area The redesign and extension would result in approximately 84 additional parking spaces for a total of approximately 156 spaces (including 8 ADA spaces); and

WHEREAS, the Applicant proposes to convey fee title to lot "A" to the City, consisting of approximately 1.66 acres of improved parklands, in lieu of paying park and open space development impact fees; and

WHEREAS, this City Council approved Resolution No. 8109 establishing policies and procedures for the voluntary dedication of park and open space lands associated with development projects within the City; and

WHEREAS, the Project is subject to park and open space development impact fees in the amount of four hundred and sixty three thousand three hundred and twelve dollars and ninety eight cents ($463,312.98); and

WHEREAS, the unincorporated parklands, and the improvements and land have an appraised median value of eight million one hundred twenty thousand dollars ($661,227.00); and

WHEREAS, on December 14, 2023, the Parks and Recreation Advisory Commission recommended that the City Council accept the dedication of the proposed parklands and improvements as represented in Tentative Tract Map No. 20528, and issue a credit for park and open space development impact fees after such dedication occurs, after any associated improvements are constructed and accepted by the City.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS AS FOLLOWS:

Section 1. The City Council finds that acceptance of the proposed parklands and improvements will address substantial recreational needs of the City and that value of the land and improvements exceed the dollar amount of park and open space development impact fees that would have otherwise been collected for the Project.

Section 2. The City Council approves that the park and open space development impact fees in the amount of four hundred and sixty-three thousand three hundred and twelve dollars and ninety-eight cents ($463,312.98) be credited to the Applicant upon satisfaction of the following requirements:

1) Conveyance of fee title interest in the subject property and improvements;
2) Construction of all improvements;
3) Acceptance of the property and improvements upon confirmation that such improvements have been constructed in accordance with the conditions of approval.

Section 3. The City Council hereby finds and determines that the adoption of this Resolution is not subject to CEQA in accordance with Section 15061(b)(3) because the activity only involves the future acceptance of fee title of real property and will not result in direct or reasonably foreseeable indirect physical change in the environment. The associated development project is subject to separate, future environmental review in accordance with CEQA.

ADOPTED, SIGNED AND APPROVED this 5th day of March, 2024.

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Eddie Tejeda, Mayor

ATTEST:

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Jeanne Donaldson, City Clerk

I, Jeanne Donaldson, City Clerk of the City of Redlands, hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof, held on the 5th day of March 2024, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Jeanne Donaldson, City Clerk