**Traffic, Transportation, and Parking Consultants**

JBA
JANO BAGHDANIAN & ASSOCIATES

**833 American Way**
**Suite 505**
**Glendale, CA 91210**
**Jano@JBAtraffic.com**
**Ph: 818-246-6265**
**Fax: 818-888-4541**
**JBATraffic.com**

# *Ararat Homes*
# *Traffic Impact Analysis*

*City of Los Angeles*
*August 1th, 2020*

Prepared by:

Jano Baghdanian, P.E., T.E., PTOE
Jano Baghdanian & Associates
Traffic, Transportation & Parking Consultants

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## 1.0 INTRODUCTION

This transportation assessment study is consistent with the City of Los Angeles Department of Transportation (LADOT), Transportation Assessment Guidelines (TAG). This study identifies and evaluates the potential project-specific transportation impacts of the proposed project. The analysis focuses on traditional mobility considerations as well as safety, sustainability, smart growth, and the reduction of greenhouse gas emissions.

The TAG conforms to the requirements of Senate Bill 743, and is consistent with the California Environmental Quality Act (CEQA), requiring the use of vehicle miles traveled (VMT) as the primary metric for evaluating a project's transportation impacts. The TAG also requires the traffic analysis to examine whether the proposed project conflicts with the City's plans, programs, ordinances, and policies. In addition, Non-CEQA transportation analysis is also required to assess the project's potential impacts on pedestrian, bicycle and transit facilities, project access, safety and circulation, project construction, and the potential for residential street intrusion.

# 2.0 PROJECT DESCRIPTION

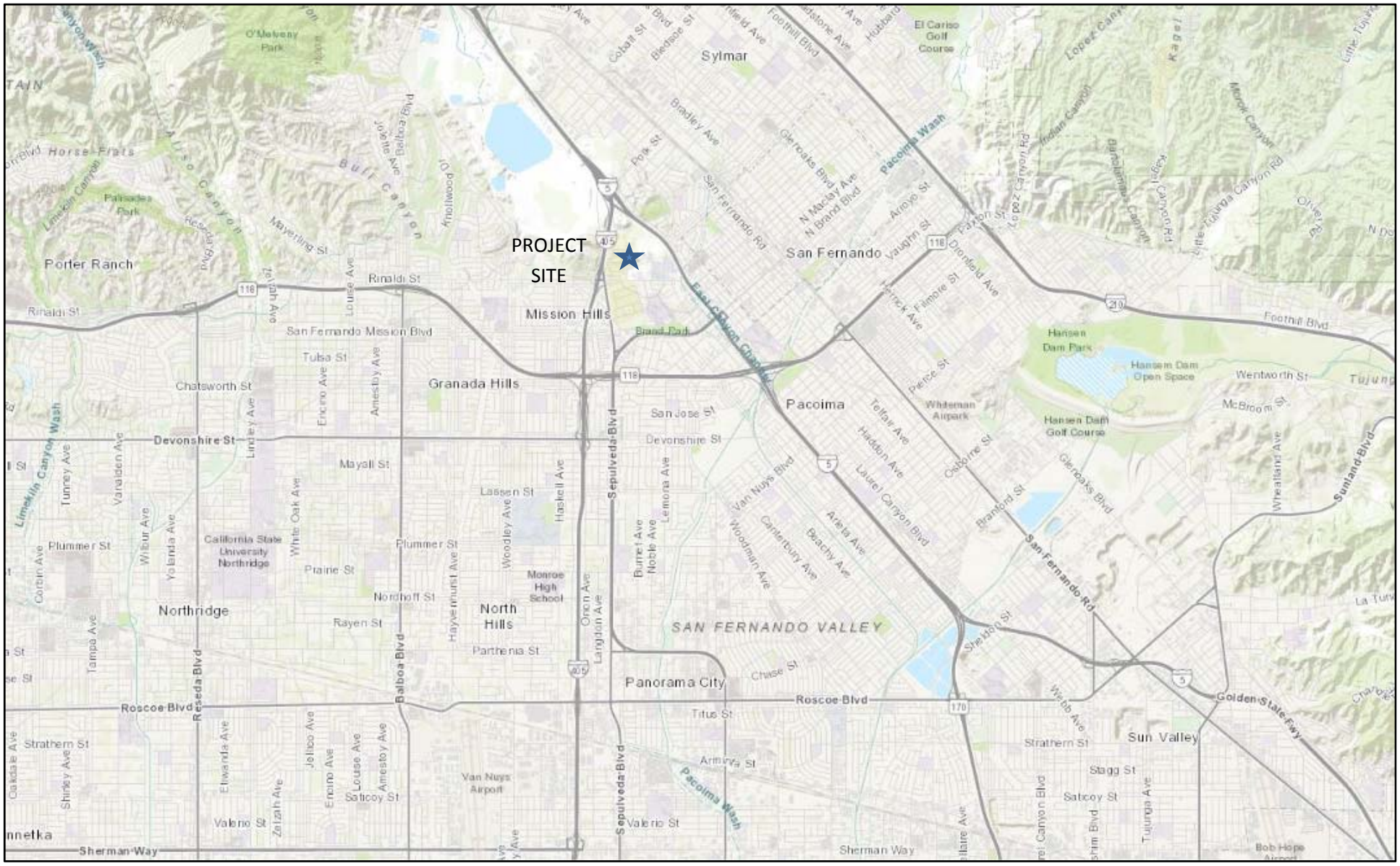
## 2.1 Project Location

As illustrated in **Figure 1**—*Regional Location Map*, the Project site (15105 Mission Hills Road) is located within the City of Los Angeles (the "City") in the Community of Mission Hills. Regional access to the Project site is provided by the I-5 (Golden State Freeway), the I-405 (San Diego Freeway) and the SR-118 (Ronald Reagan Freeway).

As illustrated in **Figure 2**—*Project Site and Surrounding Uses*, the Project site is bound on the east by Ararat Home of Los Angeles, an assisted living facility, on the west by Eden Memorial Park, a cemetery and on the south by Mission Hills Road. The Project site are currently occupied by three single-family housing units. The housing units will be demolished as part of the proposed project.

## 2.2 Project Characteristics

The proposed project consists of the expansion of the existing Ararat Home development. It will include the construction of 87-dwelling units of senior adult housing, a 100-bed assisted living facility and a 100-bed nursing home.




Map Source: Google Maps, 2020

Map Source: Google Earth, 2020

## 2.3 Existing Site Vehicular Access

Vehicle access to the existing land use is provided through a local access road that connects to Mission Hills Road.

## 2.4 Proposed Project Site Vehicular Access

Vehicular access to the proposed development will be provided via a driveway on Mission Hills Road at the western boundary of the project site and via the existing local access road along the eastern boundary of the site.

Please refer to **Figure 3**—*Proposed Site Plan* for an illustration of the proposed site layout. The following is a detailed description of the proposed site access points:

- Mission Hills Driveway: This driveway is planned to be 26 feet in width and located approximately 15 feet east of the western border of the Project site. This driveway will provide both ingress to and egress from the parking structure underneath the proposed assisted living and nursery facilities.
- Access Road: This access road which is approximately 24 feet in width, runs along the eastern border of the Project site and provides access to the proposed senior adult housing development to the north as well as the pick-up/drop-off area for the proposed assisted living and nursery facilities.

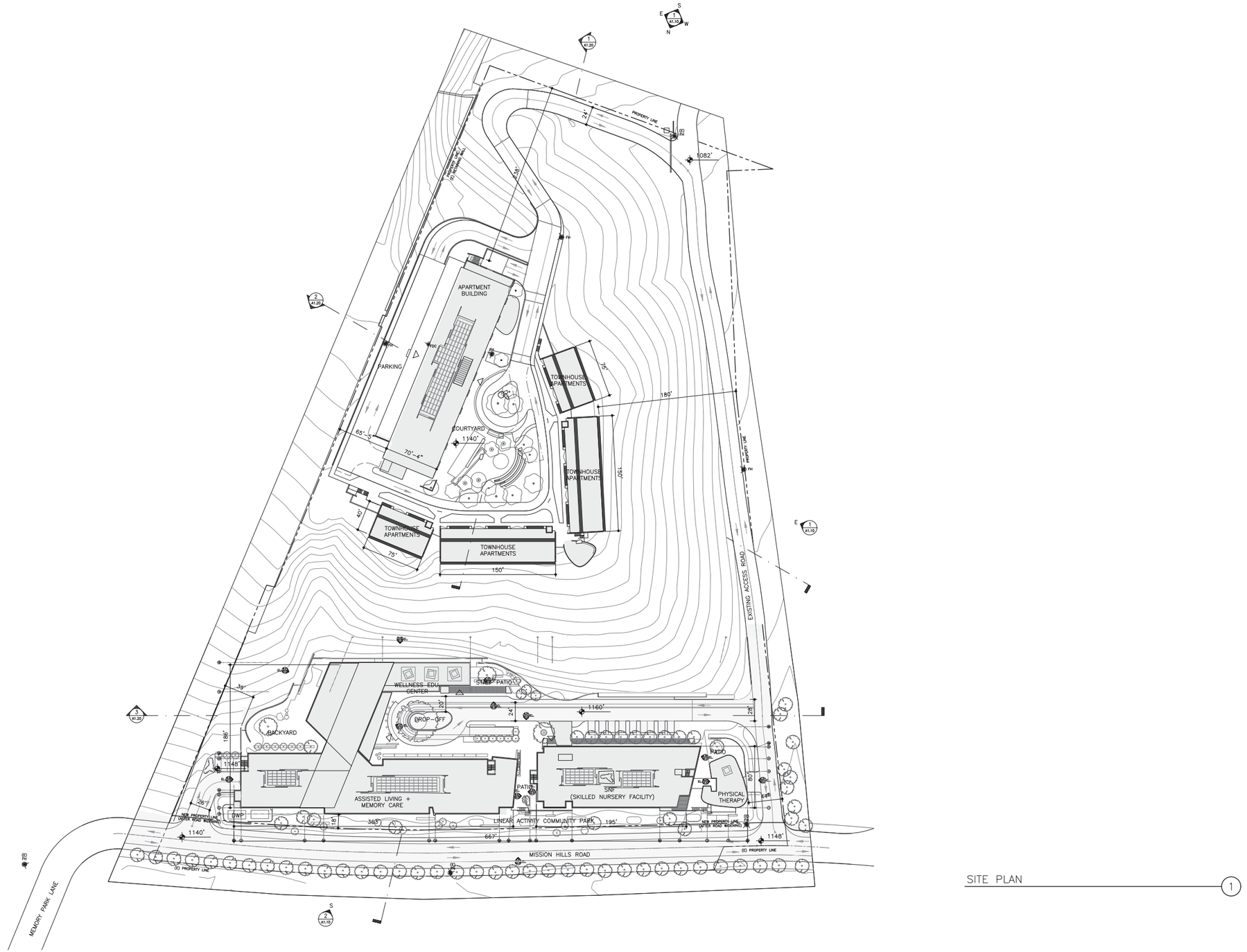
## 2.5 Proposed Project Parking

Project parking will be provided in a subterranean structure with 135 spaces.

## 2.6 Proposed Project Loading

Commercial Loading areas will be provided via the access road to either the drop-off area for the assisted living/nursery facility directly to the senior adult housing development to the north.

As described above, there is also a passenger drop-off and loading area in front of the assisted living facility.




SITE PLAN 1

Zakian.Woo Architects
9018 Lindblade Street
Culver City CA
9 0 2 3 2
tel: 310.202.9900
fax: 310.841.6228

Z W Architects

ARARAT HOME OF LOS ANGELES, INC.
15105 MISSION HILLS RD, MISSION HILLS, CA 91345

# ARARAT HOME

EXPANSION ENTITLEMENTS APPLICATION
LA CITY PLANNING DEPARTMENT

SITE PLAN

01.17.2020

A1.00

# 3.0 PROJECT CONTEXT

## 3.1 Non-vehicular Transportation System

### 3.1.1 Pedestrian

In the vicinity of the project site, within a quarter mile radius, the following pedestrian facilities are provided:

#### *3.1.1.1 Sidewalk*

Pedestrian sidewalks are provided at the following locations:

- Rinaldi Street—on the south side, there is a 15-foot sidewalk with tree wells west of Lev Avenue and a 10-foot sidewalk with tree wells east of Lev Avenue. On the north side, there is no sidewalk west of Memory Park Avenue, in front of the Eden Memorial Park. There is a 10-foot sidewalk between Memory Park Avenue and Alemany Drive and a 7-foot sidewalk east of Alemany Drive.
- Indian Hills Road—on the west side, there is a 6-foot sidewalk with 4-foot parkway between Rinaldi Street and Mission Hills Road. There is no sidewalk north of Mission Hills Road. On the east side, there is a 10-foot sidewalk between Rinaldi Street the Providence Holy Cross Medical Center Receiving driveway and a 6-foot sidewalk to the north.
- Mission Hills Road— between Indian Hills Road and the driveway of the existing Ararat Home assisted living facility, there is a 10-foot sidewalk on the north side and a 5-foot sidewalk with 5-foot parkway on the southside. Between the existing Ararat Home driveway and Memory Park Avenue, Mission Hills Road does not have any sidewalk on both sides of the street.
- Memory Park Avenue—on the east side, there is a 6-foot sidewalk between Rinaldi Street and Mission Hills Road. There is no sidewalk on the west side of Memory Park Avenue.

#### *3.1.1.2 Crosswalks, Curb Ramps and Pedestrian Push Buttons*

In the vicinity of the project site, pedestrian crosswalks, curb ramps and pedestrian push buttons are available at the following locations:

- Rinaldi Street and Alemany Drive intersection—this is a two-phase signalized intersection with pedestrian push buttons for crossing Rinaldi Street. There are continental yellow school crosswalks crossing the east and the south legs of the intersection with accessible ramps.
- Rinaldi Street and Indian Hills Road intersection—this is also a two-phase signalized intersection with pedestrian push buttons for crossing Rinaldi Street. There are white traditional crosswalks crossing the east, west and south legs of the intersection. There is a white continental crosswalk crossing the north leg. Curb ramps are provided at all four corners.

- Mid-block location on Indian Hills Road just north of Providence Holy Cross Medical Center Receiving driveway—there is a mid-block white continental crosswalk with curb ramps on Indian Hills Road. The north and southbound vehicular traffic are controlled by STOP signs.
- Indian Hills Road and Mission Hills Road intersection—the eastbound approach of this three-legged intersection is controlled by a STOP sign. There are curb ramps provided for an unmarked crosswalk crossing the south leg of the intersection.

As part of the proposed project, Mission Hills Road in front of the project site will be widened and improved to provide a two-way roadway with one lane of traffic in each direction with sidewalks on both sides of the street in accordance to City standards.

According to the City of Los Angeles' Mobility Plan 2035, Rinaldi Street east of Indian Hills Road is a Pedestrian Enhanced District. Therefore, the project will comply with City requirements for Pedestrian Enhanced Districts, if any.

### 3.1.2 Bicycle

Within a quarter mile radius of the project site, bicycle facilities are provided at the following location:

- Rinaldi Street—there is a Class II Bicycle Lane for eastbound and westbound directions on Rinaldi Street.

According to the City of Los Angeles' Mobility Plan 2035, the project site and its vicinity is not a part of the Bicycle Enhanced Network.

### 3.1.3 Transit

Transit services in the project area are provided by Los Angeles County Metropolitan Transportation Authority (Metro). LA Metro operates local bus Routes 237 and 239 within the study area along Sepulveda Boulevard and Rinaldi Street.

- Route 237 operates between the intersection of Highland Avenue and Santa Monica Boulevard in Hollywood and the intersection of Sepulveda Boulevard and Rinaldi Street in Mission Hills. Services are provided from Monday through Friday from 4:48 am to 1:42 am. During the peak periods, the headways are approximately 45 to 50 minutes.
- Route 239 operates between the Metrolink Sylmar Station in Sylmar and the intersection of Ventura Boulevard and Zelzah Avenue in Encino. Services are provided from Monday through Friday from 5:10 am to 10:34 pm. During the peak periods, the headways are approximately 50 minutes to an hour.

Please refer to **Figure 4**—*Map of Existing Public Transit* for illustrations of the locations of existing public transit routes. Rinaldi Street in the vicinity of the project site is identified as a Comprehensive Transit Enhanced Street in the City of Los Angeles' Mobility Plan 2035, Transit Enhanced Network.

Map Source: LA Metro, 2020

## 3.2 Vehicular Transportation System

### 3.2.1 Regional Freeway System

The Project area is served by the following freeways:

- **The I-5 (Golden State) Freeway**, is a north/south freeway that extends between northern and southern California. The nearest intersection freeways are the I-405 to the north and the SR-118 to the south. The segment of the I-5 freeway near the project site generally consists of three mixed-flow travel lanes in each direction plus one High Occupancy Vehicle (HOV) lane for the southbound direction. In the vicinity of the study area, there are north and southbound ramps at San Fernando Mission Boulevard.

- **The I-405 (San Diego) Freeway**, near the project site, is a north/south freeway that begins at the I-5 Freeway in the community of Mission Hills, in the San Fernando Valley, and extends southerly to the City of Irvine in Orange County. The nearest intersecting freeways are the SR-118 to the south and the I-5 to the north. The segment of the I-405 Freeway near the project site consists of three mixed-flow travel lanes in each direction. There is also one High Occupancy Vehicle (HOV) lane for the southbound direction. Near the study area, there are southbound ramps located at Rinaldi Street and northbound ramps at Sepulveda Boulevard.

- **The SR-118 (Ronald Reagan) Freeway**, near the project site, is an east/west freeway that extends between Pacoima in the San Fernando Valley to the east and the City of Moorpark to the west. The nearest intersecting freeways are the I-405 to the west and the I-5 to the east. The segment of the SR-118 freeway near the project site consists of four mixed-flow travel lanes and one High Occupancy Vehicle (HOV) lane for each direction. Near the study area, there are eastbound and westbound ramps located on Sepulveda Boulevard.

### 3.2.2 Surrounding Roadway Systems

The Project area is served by the following surrounding major roadways:

- Sepulveda Boulevard in the vicinity of the project site is a north-south “Boulevard II”. It has three travel lanes in each direction separated by a continuous two-way left-turn lane. Parking is allowed on both sides of the street.

- Rinaldi Street is classified as an east-west “Avenue I”. It has two travel lanes and a bike lane in each direction with a continuous two-way left-turn lane. On Rinaldi Street between

Sepulveda Boulevard and Lev Avenue, parking is prohibited on both sides of the street. East of Lev Avenue, there are parking on both sides of the street at various locations.

- Indian Hills Road is classified as a "Local Street" and it runs in a north-south direction in the vicinity of the project site. It has one lane in each direction with parking on both sides of the street.
- Mission Hills Road is an east-west "Local Street" that runs between Memory Park Avenue and Indian Hills Road. East of the project site, Mission Hills Road has one travel lane in each direction and parking is allowed on both sides of the street. In front of the project site, Mission Hills Road is currently an eastbound one-way street with angled parking on the north side of the street. As part of the off-site improvement for this project, Mission Hills Road will be widened along the project frontage to accommodate one lane of traffic and sidewalk in each direction with parking on both sides of the street.

- Memory Park Avenue is a north-south "Local Street" that connects Rinaldi Street and Mission Hills Road. It has one lane in each direction with parking on both sides of the street. It provides access to the Eden Memorial Park and the Bishop Alemany High School.

## 4.0 CEQA TRANSPORTATION IMPACT ASSESSMENT

In compliance with CEQA and/or in accordance with City regulations, LADOT may require applicants to analyze and assess project-specific transportation impacts based on the following criteria:

- If the Development Project is estimated to generate a net increase of 250 or more daily vehicle trips and requires discretionary action, a transportation assessment for a Development Project is required.
- If a Transportation Project is likely to either: (1) induce additional vehicle miles traveled by increasing vehicle capacity; or (2) reduce roadway through-lane capacity on a street that exceeds 750 vehicles per hour per lane for at least two (2) consecutive hours in a 24-hour period after the project is completed, a transportation assessment is generally required.
- A transportation assessment is required by City ordinance or regulation.

The preparation of a transportation impact assessment requires analysis and prediction of impacts or deficiencies to the circulation system generated by Development or Transportation Projects as well as the identification of feasible measures or corrective conditions to offset any impacts or deficiencies identified through a transportation assessment.

### 4.1 Project Daily Vehicle Trip Generation

LADOT's VMT calculator, Version 1.3, was used to determine if the project would exceed any of the Transportation Impact Assessment criteria which would require further transportation impact analysis. Based on the land use and size of existing and proposed project it was determined that the project would generate 978 Daily Vehicle Trips (see **Appendix A)**. Since the project's Daily Vehicle Trips exceed the 250 threshold and the project requires discretionary action, as shown in the table below, further transportation impact assessment would be required:

*Table 1: Project Daily Trip Generation*

| | Existing Land Use | Proposed Project | Net Increase |
|---|---|---|---|
| **Daily Vehicle Trips** | 0 | 978 | 978 |
| **Daily VMT** | 0 | 9,161 | 9,161 |

### 4.2 Analysis Methodology

There are two categories of transportation impact analysis required by the LADOT's TAG. The first category, in Section 2, relates to potential transportation impacts under the California Environmental Quality Act (CEQA). Should a project exceed thresholds identified in the TAG, its impact would be considered significant under CEQA and thus would require any feasible mitigation measures be

implemented to reduce the impact below the threshold of significance, to the extent feasible. The CEQA thresholds identified in the TAG are consistent with City adopted thresholds and with State CEQA guidance.

The other category of analysis, non-CEQA transportation impact analysis found in Section 3 of the TAG, analyze transportation issues relating to safety, access, and circulation as they may be the result of the construction or operation of a project. The TAG identifies specific screening criteria in Sections 2 and 3 to determine whether each type of CEQA and non-CEQA transportation analysis is required depending on the size, use and daily vehicular trip generation of the project.

## 4.3 City of Los Angeles CEQA Thresholds

The City of Los Angeles TAG identifies three Thresholds to assess the project's transportation impacts, as follows:

- **Threshold T-1:** Conflicting with Plans, Programs, Ordinances, or Policies
    - **Impact Criteria:** Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities?
- **Threshold T-2.1:** Causing Substantial Vehicle Miles Traveled
    - **Impact Criteria:** Development Projects - The development project will have a potential impact if the project meets the following:
        - For residential projects, the project would generate household VMT per capita exceeding 15% below the existing average household VMT per capita for the Area Planning Commission (APC) area in which the project is located. (see Table 2.2-1)
        - For office projects, the project would generate work VMT per employee exceeding 15% below the existing average work VMT per employee for the APC in which the project is located. (see Table 2.2-1)
        - For regional serving retail projects, the project would result in a net increase in VMT.
        - For other land use types, measure VMT impacts for the work trip element using the criteria for office projects above. (see Table 2.2-1)

*Table 2: VMT Impact Criteria (15% Below APC Average)*

| Area Planning Commission | Daily Household VMT per Capita | Daily Work VMT per Employee |
|---|---|---|
| Central | 6.0 | 7.6 |
| East LA | 7.2 | 12.7 |
| Harbor | 9.2 | 12.3 |
| North Valley | 9.2 | 15.0 |
| South LA | 6.0 | 11.6 |
| South Valley | 9.4 | 11.6 |
| West LA | 7.4 | 11.1 |

- Threshold T-3: Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use
    - **Impact Criteria:** Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

## 4.4 CEQA Analysis of Transportation Impacts

### 4.4.1 Threshold T-1: Conflict with Plans, Programs, Ordinances, or Policies

According to the LADOT's TAG, "the City of Los Angeles has adopted programs, plans, ordinances and policies that establish the transportation planning regulatory framework for all travel modes. The overall goals of these policies are to achieve a safe, accessible and sustainable transportation system for all users".

#### *4.4.1.1 Screening Criteria for T-1*

The TAG Table 2.1-1 lists all policies that should be reviewed as part of the analysis to identify any potential conflicts with the proposed project. The TAG also provides a list of questions in Table 2.1-2 to guide the review of the documents in Table 2.1-1.

*Table 3: Questions to Determine Project Applicability to Plans, Policies, and Programs*

| | Guiding Questions | Relevant Plans, Policies, and Programs | Supporting/Complementary City Plans, Policies, and Programs to consult | Project |
|---|---|---|---|---|
| **EXISTING PLAN APPLICABILITY** | | | | |
| **1** | Does the project include additions or new construction along a street designated as a Boulevard I, and II, and/or Avenue I, II, or III on property zoned | LAMC Section 12.37 | | No |

| | | | | |
|---|---|---|---|---|
| | for R3 or less restrictive zone? (screening question) | | | |
| **2** | Is project site along any network identified in the City's Mobility Plan? | MP 2.3 through 2.7 | | No |
| **3** | Are dedications or improvements needed to serve long-term mobility needs identified in the Mobility Plan 2035? | MP - Street Classifications; MP - Street Designations and Standard Roadway Dimensions | MP - 2.17 Street Widenings | If needed, Project would comply |
| **4** | Does the project require placement of transit furniture in accordance with City's Coordinated Street Furniture and Bus Bench Program? | | | No |
| **5** | Is project site in an identified Transit Oriented Community (TOC)? | MP - TEN; MP - PED; MP - BEN; TOC Guidelines | | No |
| **6** | Is project site on a roadway identified in City's High Injury Network? | Vision Zero | Mobility Plan 2035 | No |
| **7** | Does project propose repurposing existing curb space? (Bike corral, car-sharing, parklet, electric vehicle charging, loading zone, curb extension, etc.) | MP - 2.1 Adaptive Reuse of Streets; MP - 2.10 Loading Areas; MP - 3.5 Multi-Modal Features; MP - 3.8 Bicycle Parking; MP - 4.13 Parking and Land Use Management; MP - 5.4 Clean Fuels and Vehicles | MP - 2.3 Pedestrian Infrastructure; MP - 2.4 Neighborhood Enhanced Network; MP - 3.2 People with Disabilities; MP - 4.1 New Technologies; MP 5.1 Sustainable Transportation; MP - 5.5 Green Streets | No |
| **8** | Does project propose narrowing or shifting existing sidewalk placement? | MP 2.3 Pedestrian Infrastructure; MP 3.1 - Access for All; MP -PED; MP - ENG 19; MP 2.17 Street Widenings | Healthy LA; Vision Zero; Sustainability Plan | No |
| **9** | Does project propose paving, narrowing, shifting or removing an existing parkway? | MP - 5.5 Green Streets; Sustainability Plan | | No |
| **10** | Does project propose modifying, removing or otherwise affect existing bicycle infrastructure? (ex: driveway proposed along street with bicycle facility) | MP - BEN; MP - 4.15 Public Hearing Process | Vision Zero | No |
| **11** | Is project site adjacent to an alley? If yes, will project make use of, modify, or restrict alley access? | MP - 3.9 Increased Network Access; MP - ENG.9; MP - PL.1; MP - PL.13; MP - PS.3 | | No<br>No |
| **12** | Does project create a cul-de-sac or is project site located adjacent to | MP - 3.10 Cul-de-sacs | | No |

| | | | | |
|---|---|---|---|---|
| | existing cul-de-sac? If yes, is cul-de-sac consistent with design goal in Mobility Plan 2035 (maintain through bicycle and pedestrian access)? | | | |
| **ACCESS: DRIVEWAY AND LOADING** | | | | |
| **13** | Does project site introduce a new driveway or loading access along an arterial (Avenue or Boulevard)? | MP - PL.1; MP - PK.10, CDG 4.1.02 | Vision Zero | No |
| **14** | If yes to 13, Is a non-arterial frontage or alley access available to serve the driveway or loading access needs? | MP - PL.1; MPP 321 | Vision Zero | N/A |
| **15** | Does project site include a corner lot? (avoid driveways too close to intersections) | CDG 4.1.01 | | No |
| **16** | Does project propose driveway width in excess of City standard? | MPP Sec. 321 | Vision Zero, Sustainability plan MP - PED, MP - BEN CDG 4.1.04 | No |
| **17** | Does project propose more driveways than required by City maximum standard? | MPP - Sec No. 321 Driveway Design | Vision Zero, MP, Healthy LA | No |
| **18** | Are loading zones proposed as a part of the project? | MP - 2.10 Loading Areas; MP - PK.1; MP - PK.7; MP - PK.8; MPP 321 | | No |
| **19** | Does project include "drop-off" zones or areas? If yes, are such areas located to the side or rear of the building? | MP - 2.10 Loading Areas | | Yes, Onsite |
| **20** | Does project propose modifying, limiting/ restricting, or removing public access to a public right-of-way (e.g., vacating public right-of-way?) | MP - 2.3 Pedestrian Infrastructure; MP - 3.9 Increased Network Access | | No |

#### *4.4.1.2 Project Consistency Analysis*

Each of the documents listed in TAG Table 2.1-1 was reviewed for applicability to the Project, and the relevant transportation-related policies are described below, along with the Project's conformance.

#### *4.4.1.3 Summary T-1*

The Project is consistent with each of the City documents listed in Table 2.1-1 of the TAG. *Therefore, the Project would not result in a significant impact under Threshold T-1 and no mitigation measures are required. The project, together with the Related Projects, is consistent with the documents and no significant cumulative impact would occur under Threshold T-1.*

### 4.4.2 Threshold T-2: Causing Substantial Vehicle Miles Traveled

LADOT created a VMT Calculator tool which is specifically designed and intended to be used to develop project specific daily household VMT per capita and daily work VMT per employee for land use development projects in the City of Los Angeles. It implements the methodologies and significance thresholds described in Section 2.2 of the TAG for residential and employment projects. A proposed project's daily trips should be estimated using the VMT Calculator tool or the most recent version of the ITE Trip Generation Manual as described in the Section 2.2.4 of the Transportation Assessment Guidelines. TDM strategies should not be considered for the purpose of screening.

#### *4.4.2.1 Screening Criteria for T-2*

According to LADOT's TAG, if the project requires a discretionary action, and the answer is no to either T-2.1-1 or T-2.1-2, further analysis will not be required for Threshold T-2.1, and a "no impact" determination can be made for that threshold:

- T-2.1-1: Would the land use project generate a net increase of 250 or more daily vehicle trips?
- T-2.1-2: Would the project generate a net increase in daily VMT?

In addition to the above screening criteria, the portion of, or the entirety of a project that contains small- scale or local serving retail uses are assumed to have less than significant VMT impacts. If the answer to the following question is no, then that portion of the project meets the screening criteria and a no impact determination can be made for the portion of the project that contains retail uses. However, if the retail project is part of a larger mixed-use project, then the remaining portion of the project may be subject to further analysis in accordance with the above screening criteria. Projects that include retail uses in excess of the screening criteria would need to evaluate the entirety of the project's vehicle miles traveled, as specified in Section 2.2.4.

- If the project includes retail uses, does the portion of the project that contain retail uses exceed a net 50,000 square feet?

Independent of the above screening criteria, and the project requires a discretionary action, further analysis will be required if the following statement is true:

- Would the Project or Plan located within a one-half mile of a fixed-rail or fixed-guideway transit station replace an existing number of residential units with a smaller number of residential units?

For the purpose of screening for proposed change in housing units located near fixed-rail or fixed-guideway transit for development projects, the total number of housing units that exist on the project site should be counted and compared to the total number of housing units as proposed by the project to determine if the project would result in a net decrease in housing units. For the purposes of screening for proposed change in housing units that are in proximity to transit for land use plans, the total number of existing housing units within a 1/2 mile of a fixed-rail transit station that fall within the land use plan area should be counted and compared to the total housing capacity within the same area that could be built as a result of the land use plan to determine if the plan could result in a net decrease in housing.

#### *4.4.2.2 Project VMT Analysis*

LADOT's VMT Calculator was used to evaluate Project VMT and compare it to the VMT impact criteria. The VMT Calculator was set up with the Project's land uses and the respective sizes as the primary input. The VMT analysis results from the VMT Calculator are shown in the table below for before and after implementation of the Project's proposed TDM measures. The detailed output from the VMT Calculator is provided in **Appendix A**.

*Table 4: VMT Analysis Summary*

| Land Use | Size | | |
|---|---|---|---|
| Housing – Multi Family | 87 DU | | |
| Assisted Living & Nursing Home | 200 Beds | | |
| **VMT Input** | | | |
| Residential Population | 196 | | |
| Employee Population | 70 | | |
| Project Area Planning Commission | North Valley | | |
| **VMT Calculator Result** | | | |
| | **Before TDM** | **After TDM** | **Reductions** |
| Total Daily VMT | 9,161 | 8,397 | 764 |
| Home-Based Production VMT | 2,055 | 1,795 | 260 |
| Home Based Work Attraction VMT | 918 | 853 | 65 |
| Household VMT Per Capita | 10.5 | 9.2 | 1.3 |
| Impact Threshold | 9.2 | 9.2 | 0 |
| **Significant Impact** | **Yes** | **No** | **Fully Mitigated** |
| Work VMT Per Employee | 13.1 | 13.1 | 0 |
| Impact Threshold | 15.0 | 15.0 | 0 |
| **Significant Impact** | **No** | **No** | **N/A** |

#### *4.4.2.3 VMT Before TDM Measures*

As shown in the table above and **Appendix A** the Project is estimated to generate 9,161 daily VMT without incorporation of TDM measures. It would produce 2,055 home-based production VMT (used to calculate household VMT per capita) and 918 home-based work attraction VMT (used to calculate work VMT per employee). Based on the estimate of 196 population, the Project would generate average VMT per capita of 10.5, which is more than the North Valley APC impact threshold of 9.2 and, therefore, would result in a significant VMT impact. Additionally, based on the estimate of 70 employee population, the Project would generate average work VMT per employee of 13.1, which is less than the North Valley APC impact threshold of 15.0 and, therefore, would not result in a significant VMT impact.

#### *4.4.2.4 VMT After TDM Measures*

As shown in the table above and **Appendix A** with the TDM measures in place, the Project is estimated to generate 8,397 daily VMT (a reduction of 764 daily VMT compared to pre TDM mitigation measures). Based on the estimate of 196 population, the Project would generate average VMT per capita of 9.2. Therefore, with the TDM measures, the VMT impact of the Project would be reduced to the less-than-significant levels prior to incorporation of TDM.

#### *4.4.2.5 TDM Mitigation Measures*

In order to mitigate the Project VMT impacts for VMT per capita of 10.5 to less than North Valley APC impact threshold of 9.2, the following TDM strategies will be implemented to fully mitigate project impacts:

*Table 5: TDM Strategy Input*

| Strategy Type | | Description | Proposed Project | Mitigations |
|---|---|---|---|---|
| Parking | Unbundle Parking | Monthly cost for parking ($) | N/A | $50 |
| Education & Encouragement | Voluntary travel behavior change program | Employees and residents participating (%) | N/A | 100% |
| Bicycle Infrastructure | Include Bike Parking Per LAMC | Meets City Bike Parking Code (Yes/No) | N/A | Yes |
| | Include Secure Bike Parking & Showers | Includes indoor bike parking/lockers, showers, & repair station (Yes/No) | N/A | Yes |
| Neighborhood Enhancement | Pedestrian Network Improvements | Included (Within Project & Connecting off-site/ within project Only) | N/A | Within Project & connecting off-site |

#### *4.4.2.6 Cumulative Impacts*

*The Project does not demonstrate a project impact by applying an efficiency-based impact threshold (i.e. VMT per capita or VMT per employee) in the project impact analysis. Therefore, a less than significant project impact conclusion can be made which according to the TAG is enough in demonstrating there is no cumulative VMT impact.*

#### *4.4.2.7 Summary T-2*

*Using LADOT's VMT calculator, it was determined that the Project only generates VMT impacts for work VMT per employee at the rate of 9.8. However, by implementing TDM strategies, as shown in "TDM Strategy Input" table above, the Project mitigates all project related significant impacts to less than North Valley APC impact threshold of 9.2. The mitigation TDM strategies are listed in "TDM Strategy Input" table above.*

### 4.4.3 Threshold T-3: Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use

LADOT's TAG indicates that impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from the project site, and may include safety, operational, or capacity impacts. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. The analysis for T-3 should explore any potential conflicts that may be created by the driveway configuration or through the placement of project driveway(s) in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections.

#### *4.4.3.1 Screening Criteria for T-3*

If the project requires a discretionary action, and the answer is "yes" to either of the following questions, further analysis will be required to assess whether the project would result in impacts due to geometric design hazards or incompatible uses:

- Is the project proposing new driveways, or introducing new vehicle access to the property from the public right-of-way?
- Is the project proposing to, or required to make any voluntary or required, modifications to the public right-of-way (i.e., street dedications, reconfigurations of curb line, etc.)?

#### *4.4.3.2 Project Hazards Analysis*

Project access and circulation plans were reviewed considering commonly accepted traffic engineering design standards[1] to ascertain whether any deficiencies are apparent in the site access plans which would be considered significant. According to the TAG, the determination of significance shall be on a case-by-case basis, considering the following factors:

- The relative amount of pedestrian activity at project access points.
- Design features/physical configurations that affect the visibility of pedestrians and bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists.
- The type of bicycle facilities the project driveway(s) crosses and the relative level of utilization.
- The physical conditions of the site and surrounding area, such as curves, slopes, walks, landscaping or other barriers, that could result in vehicle/pedestrian, vehicle/bicycle, or vehicle/vehicle impacts.
- The project location, or project-related changes to the public right-of-way, relative to proximity to the High Injury Network or a Safe Routes to School program area.
- Any other conditions, including the approximate location of incompatible uses that would substantially increase a transportation hazard.

As shown on the project's site plan for access and circulation in **Figure 3** the Project proposes two two-way driveways on Mission Hills Road for ingress and egress. One driveway at the easterly side of the project will serve the residential development and the nursing home. The driveway on the westerly side of the project will serve the Assisted living. There will be a third driveway for deliveries between the assisted living and the nursing home buildings.

#### *4.4.3.3 Driveway Design*

The driveway locations minimize the potential conflict between the parking facilities and pedestrians and vehicles on the street. Generally, each of the driveways would comply with LADOT's requirements in accordance with the Manual of Policies and Procedures.

[1] One example of traffic engineering design standards includes but is not limited to Section 321 of LADOT's Manual of Policies and Procedures, which provides guidance on driveway design.

#### *4.4.3.4 Project Site Pedestrian and Bicycle Access*

The Project would provide pedestrian access points on Mission Hills Road. Bicycle parking would be provided on site in an area of the parking separate from the vehicular parking. Mission Hills Road adjacent to the Project site is not part of the High Injury Network. Therefore, it is less than likely to have injuries resulting from collisions between vehicles and pedestrians, bicyclists, or other vehicles on Mission Hills Road.

#### *4.4.3.5 Cumulative Analysis*

According to the LADOT's TAG, significant cumulative impact for Threshold T-3 may occur if the project, and other related projects combined with access points proposed along the same block(s), would create significant impacts. However, there are no related projects within the same blocks as the Project. The Project would not result in a significant impact with respect to Threshold T-3, neither would it contribute to a cumulatively significant impact.

#### *4.4.3.6 Summary T-3*

Based on the Project site plan review and design assumptions, the Project does not present any geometric design hazards related to traffic movement, mobility, or pedestrian accessibility, and no significant impact would occur with respect to Threshold T-3. Therefore, no mitigation measures would be required.

# 5.0 NON-CEQA TRANSPORTATION ANALYSIS

## 5.1 Pedestrian, Bicycle, and Transit Access Assessment

The pedestrian, bicycle, and transit facilities in the vicinity of the project were assessed to determine the potential impacts of the project on these facilities. The factors that were taken into consideration in assessing the potential project impacts, as required by the TAG, are listed below:

| Assessment Factors | Project Impact |
|---|---|
| **Removal or degradation of existing sidewalks, crosswalks, pedestrian refuge islands, and/or curb extensions/bulbouts** | No |
| **Removal or degradation of existing bikeways and/or supporting facilities (e.g., bikeshare stations, on-street bike racks/parking, bike corrals, etc.)** | No |
| **Removal or degradation of existing transit and/or local circulator facilities including stop, bench, shelter, concrete pad, bus lane, or other amenities** | No |
| **Removal of other existing transportation system elements supporting sustainable mobility** | No |
| **Increase street crossing distance for pedestrians; increase in number of travel/turning lanes; increase in turning radius or turning speeds** | No |
| **Removal, degradation, or narrowing of an existing sidewalk, path, crossing, or pedestrian access way** | No |
| **Removal or narrowing of existing sidewalk-street buffering elements (e.g., curb extension, parkway, planting strip, street trees, etc.)** | No |
| **Increase in pedestrian or vehicle volume, and thereby increase the need or attraction to cross a street at unmarked pedestrian crossings or unsignalized or uncontrolled intersections where a crossing is not available without significant rerouting. Refer to the Guidelines for Marked Crosswalks Across Uncontrolled Locations, in LADOT's Manual of Policies and Procedures (MPP) Section 344, or Guidelines for Traffic Signals in MPP Section 353 to determine approval and warrant criteria for an additional crossing.** | No |
| **Increase in pedestrian or vehicle volume, and thereby increase the need or attraction to cross a street at unmarked pedestrian crossings or unsignalized or uncontrolled intersections where a crossing is not available without significant rerouting. Refer to the Guidelines for Marked Crosswalks Across Uncontrolled Locations, in LADOT's Manual of Policies and Procedures (MPP) Section 344, or Guidelines for Traffic Signals in MPP Section 353 to determine approval and warrant criteria for an additional crossing.** | No |
| **Increase transit demand at bus stops that lack marked crossings, with insufficient sidewalks, or are in isolated, unshaded, or unlit areas.** | No |

## 5.2 Project Access, Safety and Circulation Evaluation

### 5.2.1. Study Intersections

After a consultation with the LADOT, it was determined that the following three (3) intersections would be analyzed and evaluated for operational assessment.

(1) Rinaldi Street and Memory Park Avenue—a three-legged unsignalized intersection with STOP control on the southbound approach of Memory Park Avenue.
(2) Rinaldi Street and Indian Hills Road—a four-legged two-phase signalized intersection
(3) Indian Hills Road and Mission Hills Road—a three-legged unsignalized intersection with STOP control on the eastbound approach of Mission Hills Road

Refer to **Figure 5**—*Lane Configuration at Study Intersections* for a depiction of the configurations of traffic lanes at the approaches to the study intersections.

### 5.2.2 Existing Traffic Counts

Traffic counts were obtained for vehicular turning movements at the following three (3) intersections:

(1) Rinaldi Street and Memory Park Avenue
(2) Rinaldi Street and Indian Hills Road
(3) Indian Hills Road and Mission Hills Road

Vehicular turning movement counts were conducted on Wednesday, November 6, 2019, during the typical commuter hours of 7:00 AM to 10:00 AM and 3:00 PM to 6:00 PM, to obtain existing traffic volumes for the AM and PM peak hours.

Please refer to **Appendix B** for the manual traffic counts, and **Figure 6**—Existing (AM/PM Peak) Traffic Volumes for an illustration of the AM and PM peak-hour turning movement counts for the study intersections.

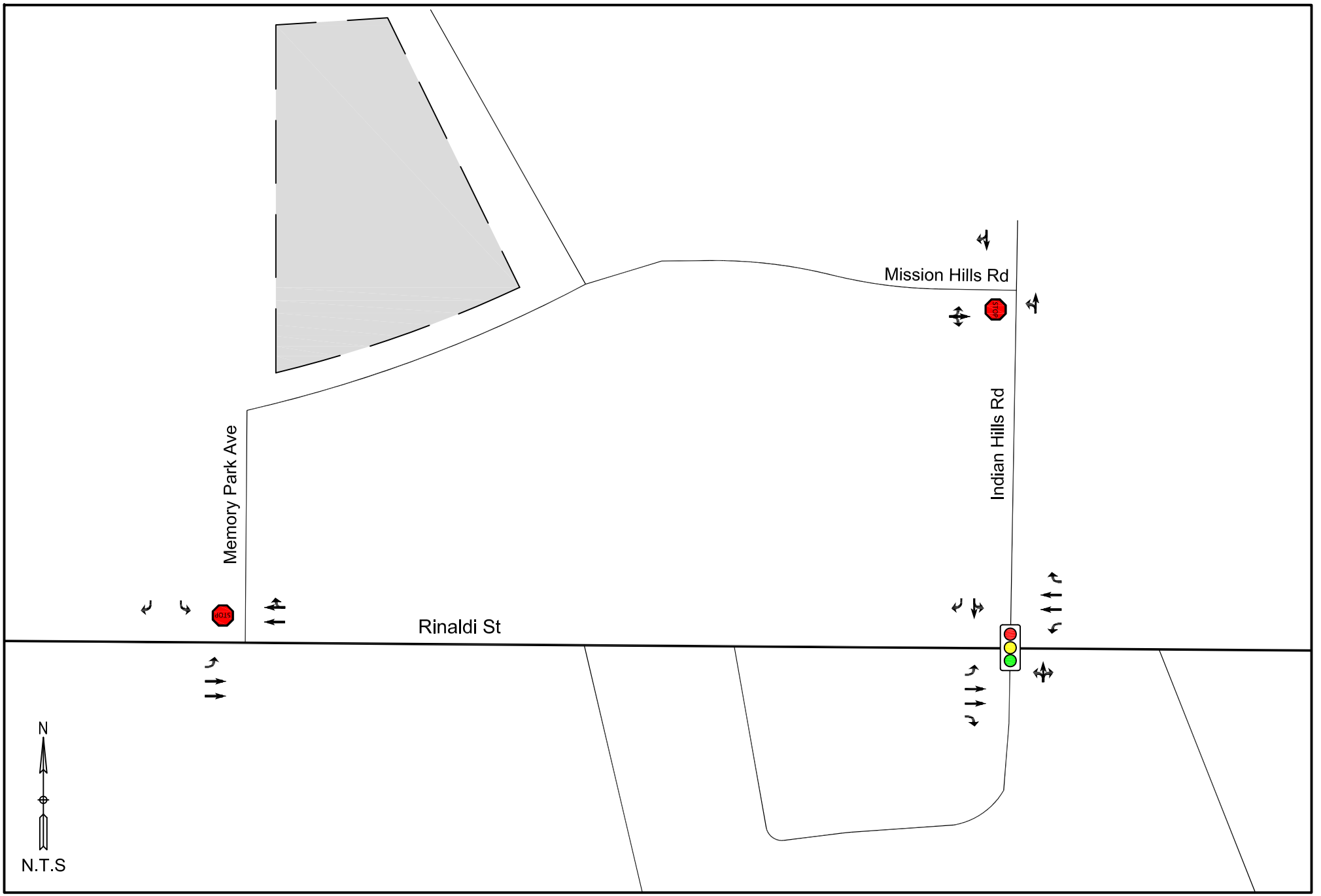



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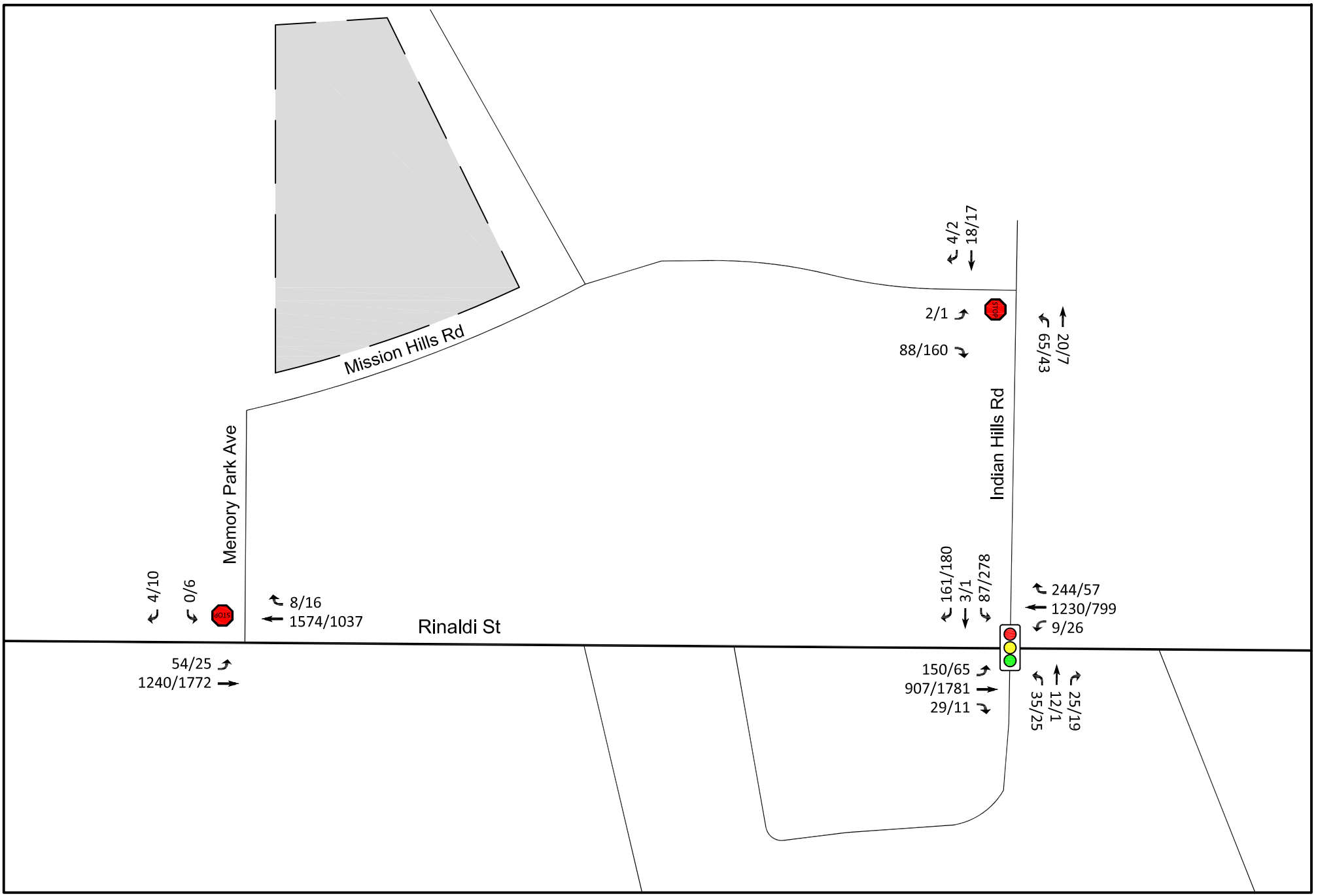
Figure 5: Lane Configurations at Study Intersections




= Project Site  xx/xx = AM/PM Peak

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Figure 6: Existing (AM/PM Peak) Traffic Volumes

## 5.3 Project Trip Generation Methodology

Trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual 10th Edition* were used in this analysis.

The trip generation calculations, and any reductions applied, are consistent with *the LADOT's TAG* and have been approved by City Staff.

The proposed Project consists of the following land uses:

- 87-dwelling units of attached senior adult housing
- 100-bed assisted Living
- 100-bed nursing home

As shown in **Table 6**—*Project Trip Generation*, the project is forecast to result in 53 net new AM peak hour trips, 71 net new PM peak hour trips, and 888 net new daily trips.

*Table 6: Project Trip Generation*

| Land Use (ITE Code) | Size | Units | AM Peak Hour Trips | | | | PM Peak Hour Trips | | | | Daily Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rate | Total | In | Out | Rate | Total | In | Out | Rate | Total |
| **New Project Land Use Added** | | | | | | | | | | | | |
| Senior Adult Housing--Attached (252) | 87 | du | 0.20 | 17 | 35%<br>6 | 65%<br>11 | 0.26 | 23 | 55%<br>13 | 45%<br>10 | 3.70 | 322 |
| Assisted Living (254) | 100 | bed | 0.19 | 19 | 63%<br>12 | 37%<br>7 | 0.26 | 26 | 38%<br>10 | 62%<br>16 | 2.60 | 260 |
| Nursing Home (620) | 100 | bed | 0.17 | 17 | 72%<br>12 | 28%<br>5 | 0.22 | 22 | 33%<br>7 | 67%<br>15 | 3.06 | 306 |
| **Total Trip Generation** | | | | **53** | **30** | **23** | | **71** | **30** | **41** | | **888** |

[1] ITE "Trip Generation" Manual, 10th Edition, 2017

## 5.4 Project Trip Distribution & Assignment

Trip distribution assumptions are used to determine the origin and destination of new vehicle trips associated with the Project. The geographic distribution of Project trips is based on the functional classification of streets in the vicinity, the magnitude of traffic volumes, as well as local knowledge of the roadway network. Based on the Project trip generation shown in **Table 6** and the regional trip distribution assumptions, a proposed study area for the traffic analysis was derived. The location and the number of the intersections to be analyzed was reviewed and approved by the LADOT staff.

The following figures illustrate the Project's Trip Distributions and Assignments at the study intersections:

- **Figure 7**—*Project Trip Distribution at Study Intersections*
- **Figure 8**—*Project Trip Assignment at Study Intersections*

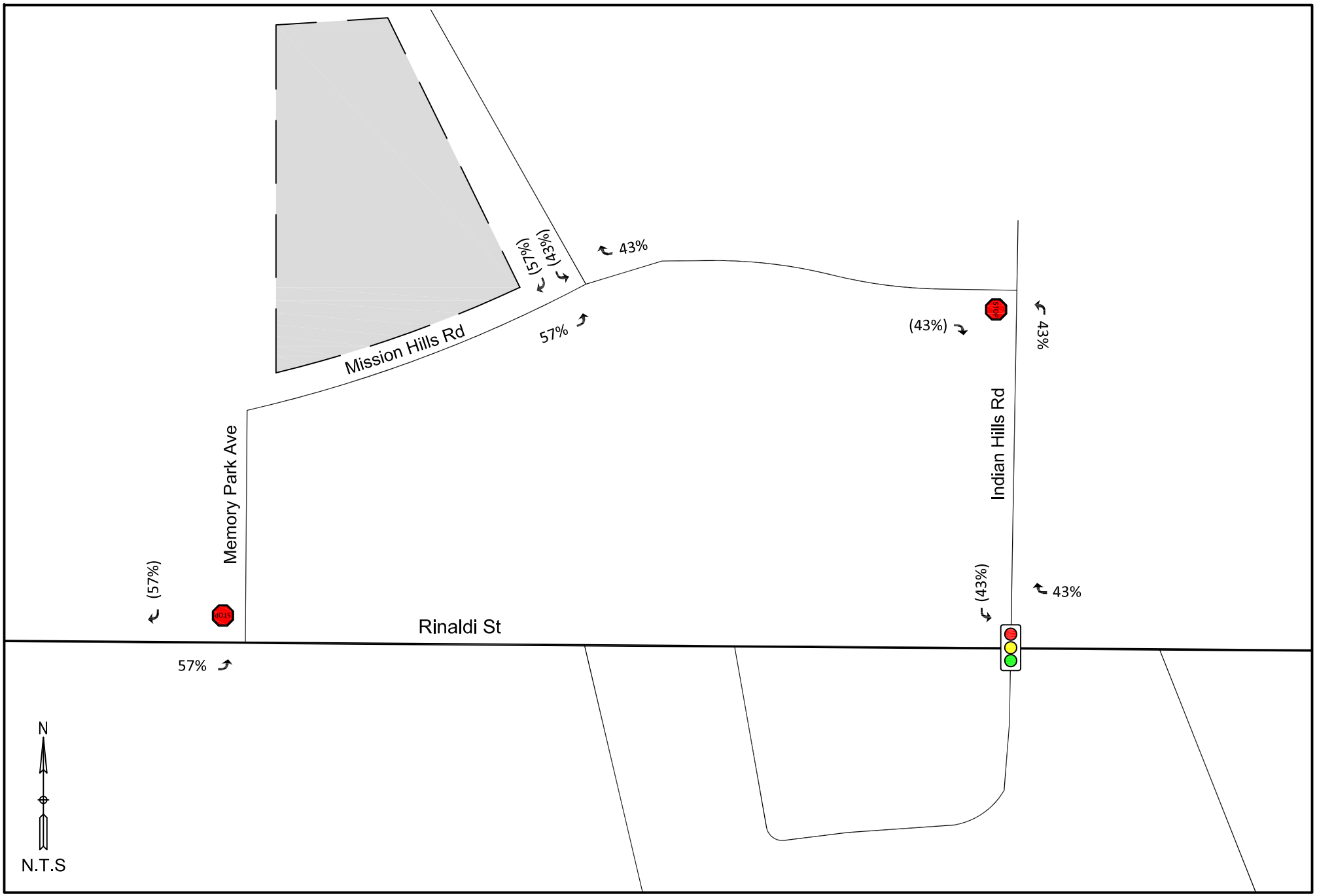


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Figure 7: Project Trip Distribution

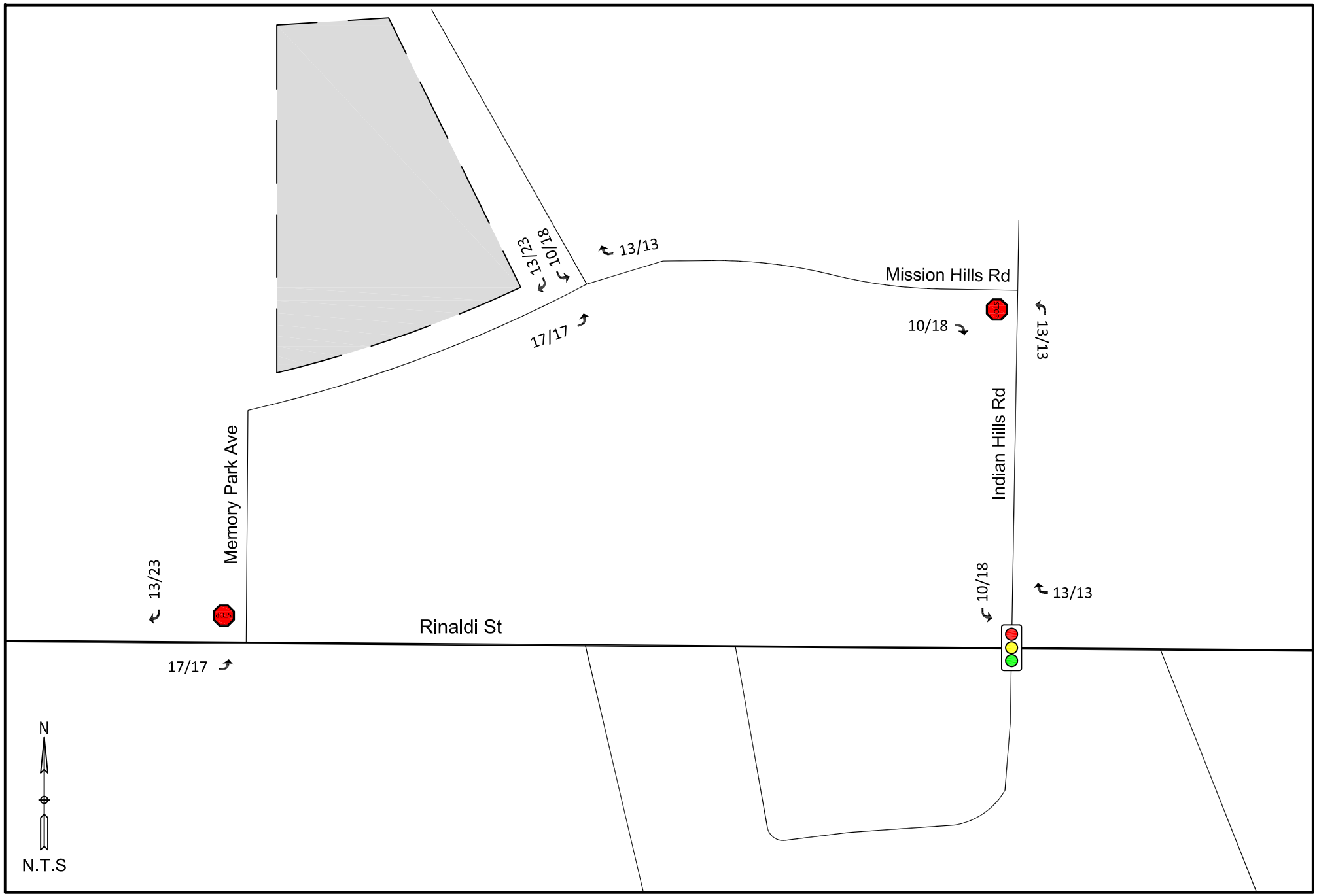


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Figure 8: Project Trip Assignment

## 5.5 Traffic Forecasts

### 5.5.1 Related Projects

To understand the relative traffic impacts for the projected year of completion (2023), this traffic study analyzed potential traffic trips due to the development of related projects in the area. A list of related projects was provided by the City of Los Angeles and their associated trip volumes were calculated using the ITE Trip Generation Manual, 10th edition. A list of these projects and their locations relative to the Project site can be viewed in **Table 7** and **Figure 9** respectively**.** Moreover, the related project's trip assignment at the study intersections is shown in **Figure 10.**

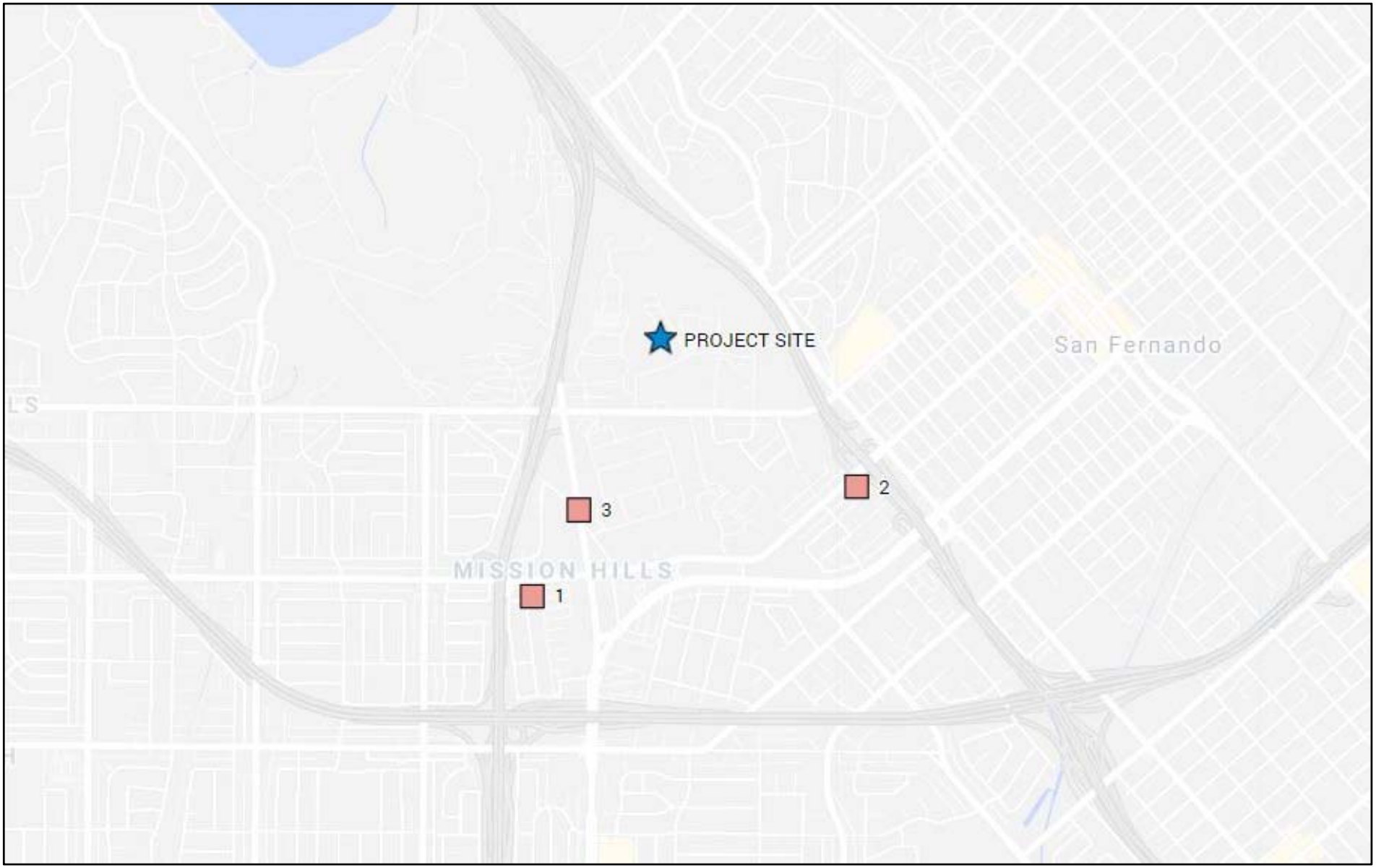
Only those projects with a potentially significant impact, and therefore a required traffic study, were included in the related projects list. Any other developing projects, that were considered small in nature, were encompassed in area wide ambient growth.

### 5.5.2 Ambient Traffic Growth

To account for the future traffic growth from intensification of existing developments, and other projects that are located further than a half mile from the project site, the existing traffic volumes were increased by an ambient growth rate of 2% per year to the anticipated year of completion (2023). These values were used to forecast future traffic volumes.

TABLE 7: RELATED PROJECT TRIP GENERATION

| Project # | Project Name | Location | Land Use | Size | Unit | Daily Trips | Weekday Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Morning | | | Evening | | |
| | | | | | | | Inbound | Outbound | Total | Inbound | Outbound | Total |
| 1 | New Office Bld | 15530 San Fernando Mission Blvd | Office | 28929 | SF | 319 | 36 | 6 | 42 | 7 | 36 | 43 |
| 2 | Senior Assisted Living | 15530 West San Fernando Mission Blvd | Senior Assisted Living | 191 | Beds | 497 | 23 | 13 | 36 | 19 | 31 | 50 |
| 3 | VTT-71105 | 11211 North Sepulveda Blvd | Single Family Home | 65 | DU | 619 | 12 | 37 | 49 | 41 | 24 | 65 |




Map Source: Google Maps, 2020

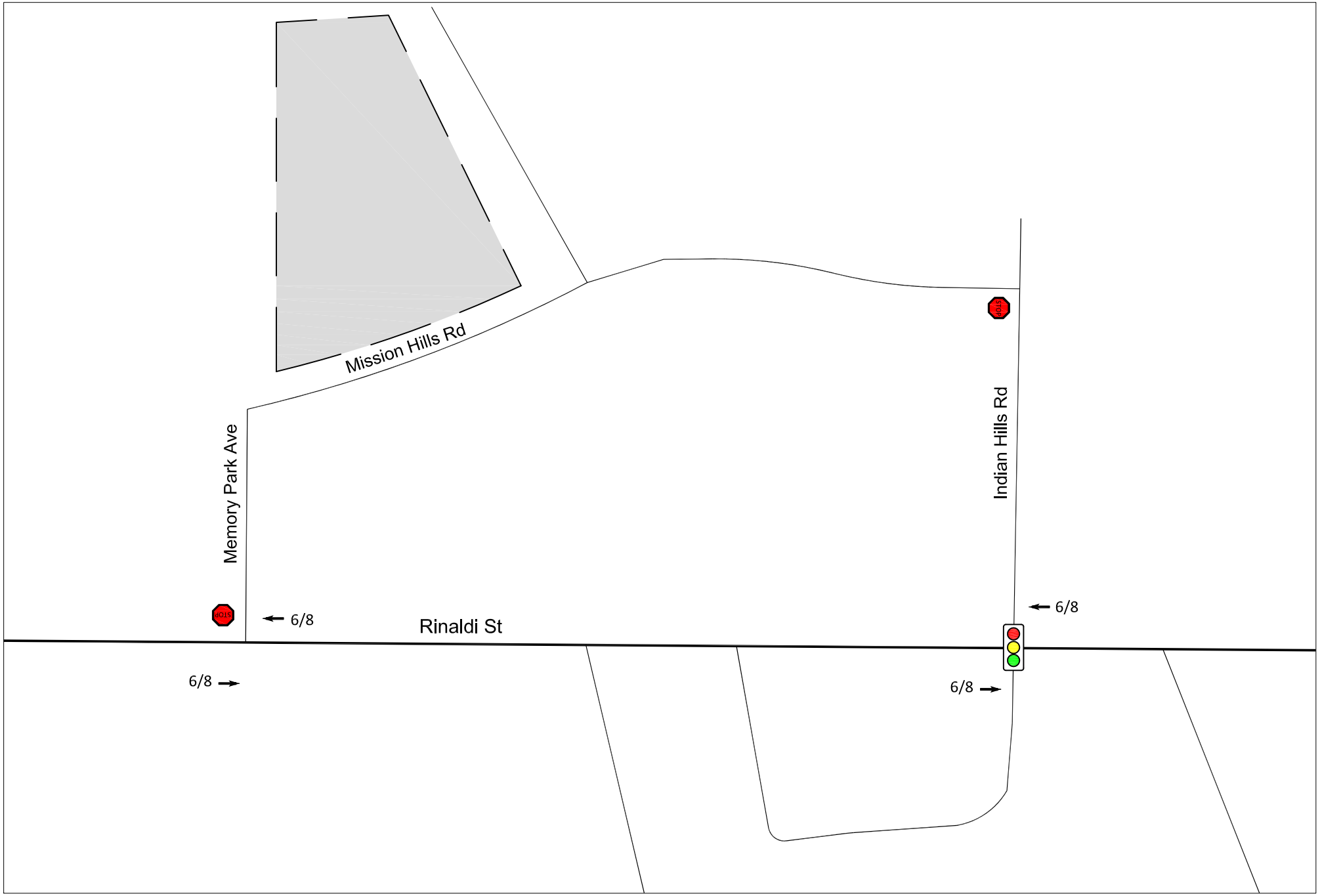



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Figure 10: Related Project Trip Assignment

## 5.6 Operational Evaluation

Operational analyses of vehicle average control delays, levels of service, and queueing were conducted at the three (3) study intersections for the following conditions and their traffic volumes are shown in the following figures:

1) Existing Traffic Conditions ..... Figure 6
2) Existing Plus Project Traffic Conditions ..... Figure 11
3) Future (2023) Without Project Traffic Conditions ..... Figure 12
4) Future (2023) With Project Traffic Conditions..... Figure 13

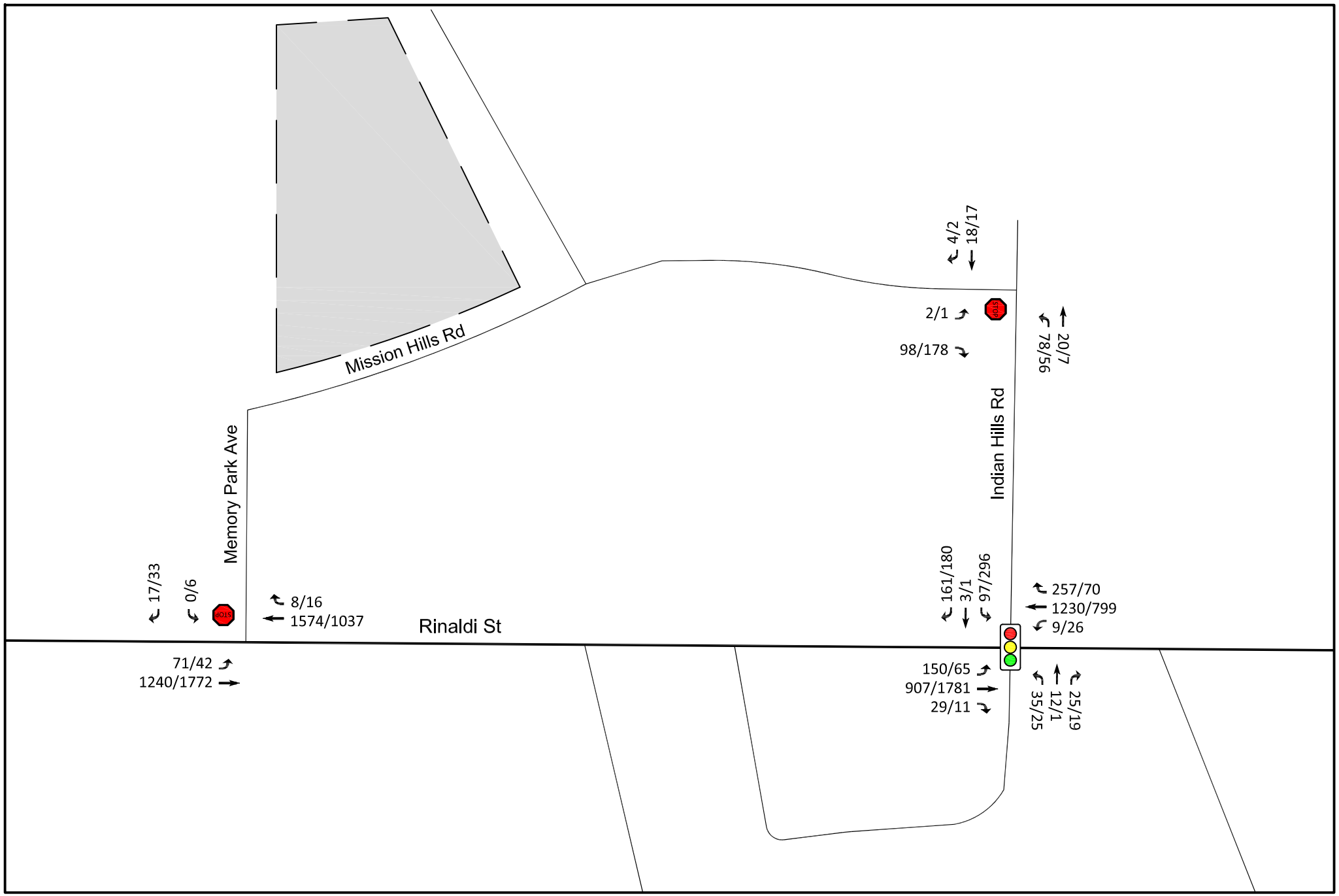


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Figure 11: Existing + Project (AM/PM Peak) Traffic Volumes

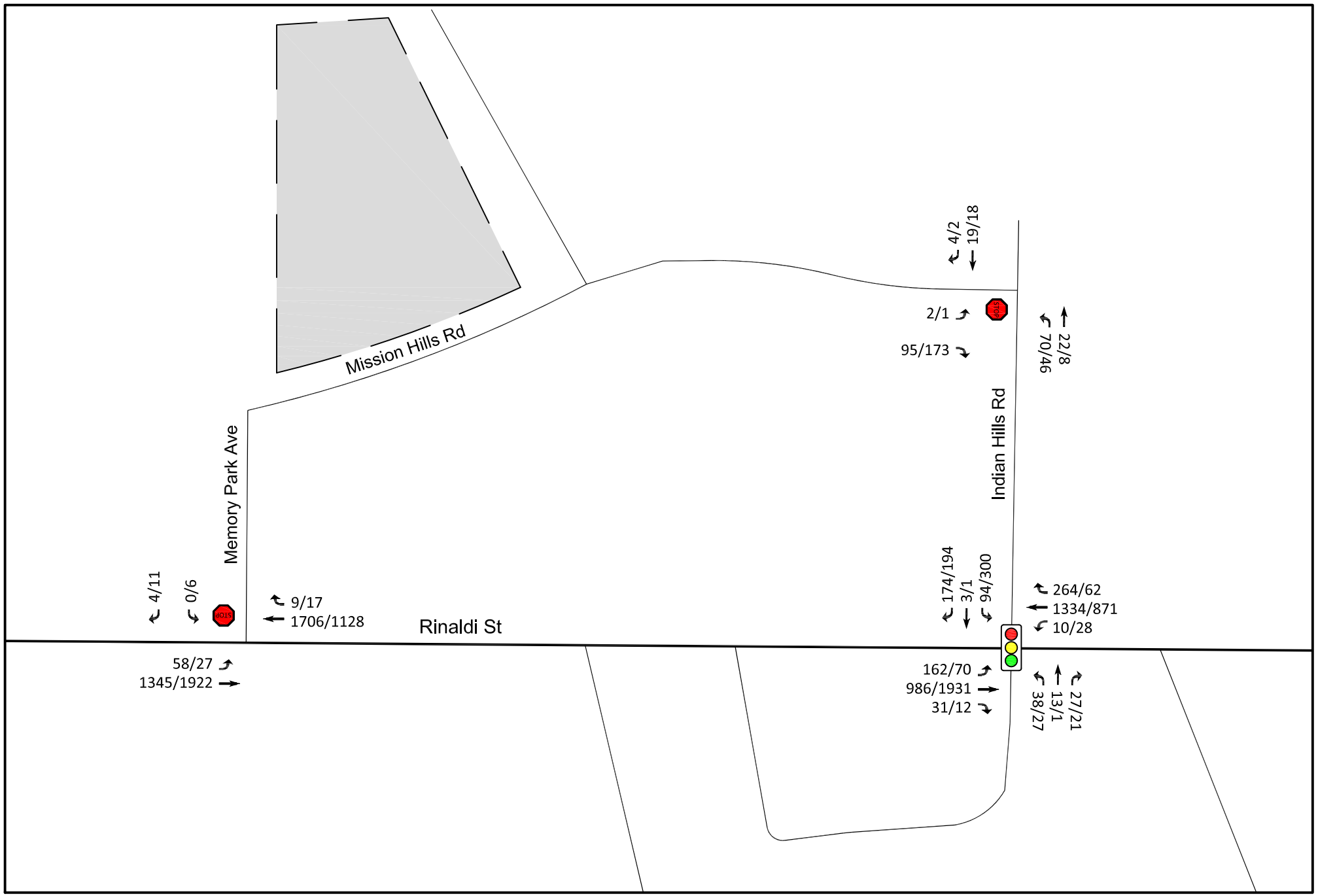


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Figure 12: Future (2023) without Project (AM/PM Peak) Traffic Volumes

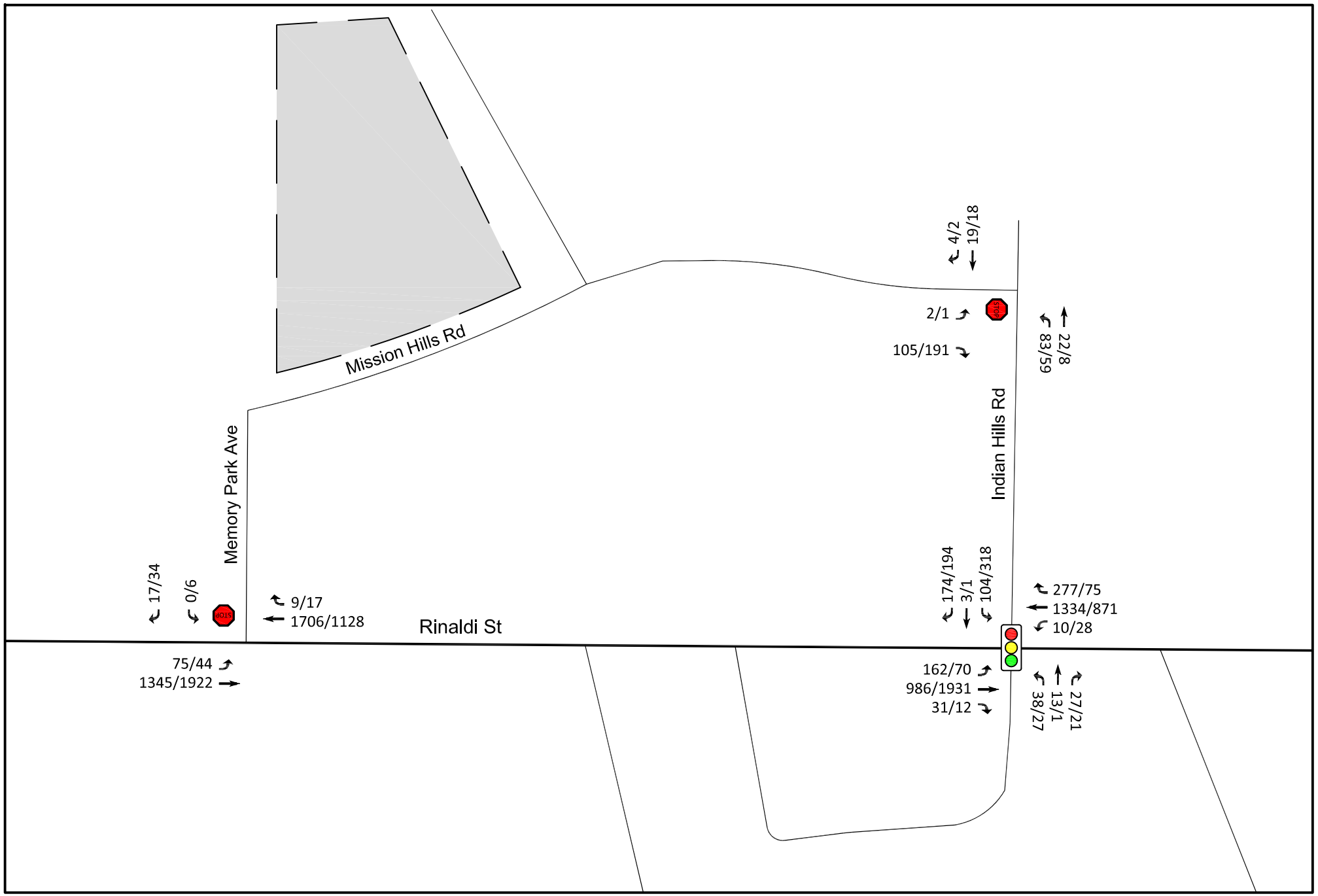


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Figure 13: Future (2023) Plus Project (AM/PM Peak) Traffic Volumes

### 5.6.1 Level of Service/Queueing Methodology

#### *5.6.1.1 Signalized Intersections*

For signalized intersections, the City of Los Angeles utilizes the Highway Capacity Manual (HCM) operations methodology for performing signalized intersection capacity analysis. This method relies on the determination of a Level of Service (LOS) at each of the study intersection by first determining their corresponding average control delay per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. It is a measure of driver discomfort, frustration, fuel consumption and lost travel time.

Level of Service varies from at best LOS A (free flow/excellent) to at worst LOS of F (stop-and-go/failure). Shown below are the LOS categories and their corresponding HCM average control delay ranges for signalized intersections.

*Table 8: Level of Service Criteria for Signalized Intersections*

| Level of Service | Average Control Delay per Vehicle (Sec/Veh) |
|---|---|
| A | 0 to 10.00 |
| B | 10.01 to 20.00 |
| C | 20.01 to 35.00 |
| D | 35.01 to 55.00 |
| E | 55.01 to 80.00 |
| F | Over 80.00 |

In this study, the intersection of Rinaldi Street and Indian Hills Road is controlled by a 2-phase traffic signal.

#### *5.6.1.2 Unsignalized Intersections*

For unsignalized intersections, the City utilizes the Highway Capacity Manual (HCM) methodologies for performing two-way stop-controlled (TWSC) and all-way Stop-controlled (AWTC) intersection capacity analyses. For TWSC intersection analysis, LOS is calculated for each movement of the intersection and the most critical LOS is the one that represents the effectiveness of that intersection. For AWSC intersection analysis, LOS is defined by the control delay of the entire intersection. The LOS thresholds for TWSC and AWSC intersections differ from those for signalized intersections to reflect different driver expectations. **Table 9** shows the LOS categories and their corresponding HCM average control delay ranges for TWSC and AWSC intersections.

*Table 9: Level of Service Criteria for Unsignalized Intersections*

| Level of Service | Average Control Delay per Vehicle (Sec/Veh) |
|---|---|
| A | 0 to 10.00 |
| B | Over 10 to 15 |
| C | Over 15 to 25 |
| D | Over 25 to 35 |
| E | Over 35 to 50 |
| F | Over 50 |

In this study, the southbound approach of Memory Park Avenue at Rinaldi Street and the eastbound approach of Mission Hills Road at Indian Hills Road are STOP controlled.

### 5.6.2 Level of Service/Queueing Analysis

The results of the operational analyses are summarized in the following tables:

- **Table 10**: Levels of Service, Delays and Queue Lengths for Existing and Existing Plus Project Conditions.
- **Table 11**: Levels of Service, Delays and Queue Lengths for Future with and without Project Conditions.

Please refer to **Appendix C** for the (HCM) analysis worksheets for the analyzed intersections.

As shown in **Tables 10** and **11**, with the addition of the Project traffic, most traffic movements at the 3 study intersections will operate at levels of service D or better and with the 95$^{th}$ percentile queue lengths of 200 feet (approximately 10 vehicles) or shorter. However, there are two particular exceptions and are addressed on the next page.

Rinaldi Street and Memory Park Avenue

Shown below is a comparison of the afternoon peak hour estimated delays for the southbound left-turn movement under the 4 study scenarios:

| Existing | Existing with Project | Change in Delay |
|---|---|---|
| 137.17 sec/veh | 145.74 sec/veh | 8.57 sec/veh |
| **Future without Project** | **Future with Project** | **Change in Delay** |
| 192.11 sec/veh | 203.08 sec/veh | 10.97 sec/veh |

The southbound left-turn movement at this intersection is currently opening at LOS F with an average delay of 137.17 seconds per vehicle during the afternoon peak hour. With the addition of the Project traffic, it is estimated to remain at LOS F with an average delay of 145.74 seconds per vehicle under the Existing with Project condition and 203.08 seconds per vehicle under the Future with Project condition.

This three-legged intersection currently is STOP-controlled for the southbound direction and uncontrolled for the east and westbound directions. The long delay for the southbound approach is caused by the lack of available gaps in east-west traffic to allow vehicles from Memory Park Avenue to enter Rinaldi Street. Consideration should be given to signalizing this intersection to allocate adequate timing to accommodate the southbound approach.

Rinaldi Street and Indian Hills Road

Shown below is a comparison of the afternoon peak hour estimated 95$^{th}$ percentile queue lengths for the eastbound through movement under the 4 study scenarios:

| Existing | Existing with Project | Change in Queue Length |
|---|---|---|
| 541.93 ft (or 21.7 veh) | 576.72 ft (or 23.1 veh) | 34.79 ft (or 1.4 veh) |
| **Future without Project** | **Future with Project** | **Change in Queue Length** |
| 744.25 ft (or 29.7 veh) | 818.01 ft (or 32.7 veh) | 73.76 ft (or 2.95 veh) |

The eastbound through movement at this intersection currently has a 95$^{th}$ percentile queue length of 541.93 feet (or approximately 21.7 vehicles) during the afternoon peak hour. With the addition of the Project traffic, the queue length is estimated to extend to 576.72 feet (or approximately 23.1 vehicles) under the Existing with Project condition and 818.01 feet (or approximately 32.7 vehicles) under the Future with Project condition. Even though the queuing for the eastbound through movement is

substantial and is estimated to extend beyond the adjacent intersection of Rinaldi Street and Lev Avenue under future conditions, the Project will only increase the queue length by approximately 3 vehicles.

The City may consider adjusting the signal timing at this intersection to reduce the queuing on Rinaldi Street. In addition, signalizing the Rinaldi Street and Memory Park Avenue could potentially reduce the traffic demand at the Rinaldi Street and Indian Hills Road intersection and improve traffic operations.

## *Table 10: Levels of Service, Delays & Queue Lengths for Existing & Existing Plus Project Conditions*

| Study Intersections | | Intersection Control | Approach | Movement | AM Peak | | | | | | PM Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Existing | | | Existing + Project | | | Existing | | | Existing + Project | | |
| | | | | | Delay (sec) | LOS | Queue (ft) | Delay (sec) | LOS | Queue (ft) | Delay (sec) | LOS | Queue (ft) | Delay (sec) | LOS | Queue (ft) |
| 1 | Rinaldi St & Memory Park Ave | Stop Controlled | SB | Left | - | - | - | - | - | - | 137.17 | F | 19.00 | 145.74 | F | 27.88 |
| | | | | Right | 17.24 | C | 1.02 | 17.90 | C | 5.08 | 25.81 | D | 19.00 | 22.70 | C | 27.88 |
| | | | EB | Left | 16.86 | C | 14.37 | 17.60 | C | 19.80 | 10.94 | B | 3.21 | 11.12 | B | 5.60 |
| | | | | Through | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 |
| | | | WB | Right | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 |
| | | | | Through | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 |
| 2 | Rinaldi St & Indian Hills Rd | Signalized | NB | Thru/Left/Right | 40.81 | D | 73.95 | 43.15 | D | 76.10 | 28.32 | C | 34.44 | 27.69 | C | 34.15 |
| | | | SB | SB Thru/Left | 36.31 | D | 89.37 | 36.93 | D | 100.13 | 34.41 | C | 258.91 | 34.56 | C | 274.65 |
| | | | | SB Right | 40.46 | D | 170.32 | 40.39 | D | 170.13 | 24.43 | C | 137.83 | 23.17 | C | 133.54 |
| | | | EB | Left | 17.48 | B | 107.22 | 17.51 | B | 107.41 | 15.48 | B | 40.28 | 16.87 | B | 42.48 |
| | | | | Through | 3.88 | A | 97.91 | 3.89 | A | 98.23 | 20.23 | C | 541.93 | 22.89 | C | 576.72 |
| | | | | Right | 2.65 | A | 4.98 | 2.66 | A | 5.00 | 7.39 | A | 3.88 | 8.04 | A | 4.10 |
| | | | WB | Left | 6.02 | A | 3.31 | 6.04 | A | 3.32 | 39.72 | D | 31.06 | 43.85 | D | 33.04 |
| | | | | Through | 4.66 | A | 153.87 | 4.68 | A | 154.37 | 10.06 | B | 181.76 | 10.94 | B | 191.72 |
| | | | | Right | 3.48 | A | 49.33 | 3.55 | A | 52.49 | 7.73 | A | 21.46 | 8.51 | A | 27.94 |
| 3 | Indian Hills Rd & Mission Hills Rd | Stop Controlled | NB | Thru/Left | 7.37 | A | 3.50 | 7.39 | A | 4.23 | 7.35 | A | 2.69 | 7.37 | A | 3.50 |
| | | | SB | Thru/Right | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 |
| | | | EB | Left/Right | 10.05 | B | 7.72 | 10.31 | B | 8.69 | 10.21 | B | 17.93 | 10.56 | B | 20.49 |

## *Table 11: Levels of Service, Delays & Queue Lengths for Future without & with Project Conditions*

| | Study Intersections | Intersection Control | Approach | Movement | AM Peak | | | | | | PM Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Future without Project | | | Future + Project | | | Future without Project | | | Future + Project | | |
| | | | | | Delay (sec) | LOS | Queue (ft) | Delay (sec) | LOS | Queue (ft) | Delay (sec) | LOS | Queue (ft) | Delay (sec) | LOS | Queue (ft) |
| 1 | Rinaldi St & Memory Park Ave | Stop Controlled | SB | Left | - | - | - | - | - | - | 192.11 | F | 24.35 | 203.08 | F | 38.43 |
| | | | | Right | 18.70 | C | 1.14 | 19.52 | C | 5.71 | 37.47 | E | 24.35 | 31.84 | D | 38.43 |
| | | | EB | Left | 19.09 | C | 18.11 | 20.20 | C | 25.19 | 11.50 | B | 3.71 | 11.72 | B | 6.41 |
| | | | | Through | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 |
| | | | WB | Right | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 |
| | | | | Through | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 |
| 2 | Rinaldi St & Indian Hills Rd | Signalized | NB | Thru/Left/Right | 41.90 | D | 80.30 | 45.49 | D | 83.84 | 29.46 | C | 37.97 | 29.31 | C | 38.14 |
| | | | SB | SB Thru/Left | 35.97 | D | 95.71 | 36.67 | D | 107.70 | 34.59 | C | 278.16 | 34.87 | C | 294.35 |
| | | | | SB Right | 40.11 | D | 183.76 | 40.03 | D | 183.54 | 23.04 | C | 144.37 | 21.86 | C | 139.84 |
| | | | EB | Left | 25.08 | C | 148.69 | 25.14 | C | 148.96 | 18.87 | B | 49.19 | 20.43 | C | 51.66 |
| | | | | Through | 4.34 | A | 117.81 | 4.35 | A | 118.22 | 33.96 | C | 744.25 | 41.96 | D | 818.01 |
| | | | | Right | 2.86 | A | 5.66 | 2.87 | A | 5.68 | 8.27 | A | 4.56 | 8.94 | A | 4.79 |
| | | | WB | Left | 6.87 | A | 4.00 | 6.88 | A | 4.01 | 55.26 | E | 40.04 | 56.78 | E | 40.85 |
| | | | | Through | 5.33 | A | 188.06 | 5.35 | A | 188.71 | 11.65 | B | 213.13 | 12.59 | B | 222.07 |
| | | | | Right | 3.82 | A | 57.80 | 3.90 | A | 61.57 | 8.69 | A | 25.16 | 9.51 | A | 32.58 |
| 3 | Indian Hills Rd & Mission Hills Rd | Stop Controlled | NB | Thru/Left | 7.38 | A | 3.76 | 7.40 | A | 4.55 | 7.35 | A | 2.84 | 7.38 | A | 3.71 |
| | | | SB | Thru/Right | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 | 0.00 | A | 0.00 |
| | | | EB | Left/Right | 10.18 | B | 8.43 | 10.47 | B | 9.42 | 10.33 | B | 19.83 | 10.73 | B | 22.38 |

# *Appendix A*

VMT Calculator Analysis

# CITY OF LOS ANGELES VMT CALCULATOR Version 1.3

*Project Screening Criteria: Is this project required to conduct a vehicle miles traveled analysis?*

## Project Information

**Project:** Ararat Home

**Scenario:**

**Address:** 15105 W MISSION HILLS ROAD, 91345

**Is the project replacing an existing number of residential units with a smaller number of residential units AND is located within one-half mile of a fixed-rail or fixed-guideway transit**

( ) Yes (•) No

## Existing Land Use

| Land Use Type | Value | Unit |
|---|---|---|
| Housing \| Single Family | | DU |

☐ Click here to add a single custom land use type (will be included in the above list)

## Proposed Project Land Use

| Land Use Type | Value | Unit |
|---|---|---|
| Housing \| Affordable Housing - Permanent | | DU |

Housing | Multi-Family
(custom) Assisted Living & Nursing H
(custom) Assisted Living & Nursing H
(custom) Assisted Living & Nursing H
(custom) Assisted Living & Nursing H
(custom) Assisted Living & Nursing H

☑ Click here to add a single custom land use type (will be included in the above list)

## Project Screening Summary

| Existing Land Use | Proposed |
|---|---|
| 0 Daily Vehicle Trips | 978 Daily Vehicle Trips |
| 0 Daily VMT | 9,161 Daily VMT |

### Tier 1 Screening Criteria

Project will have less residential units compared to existing residential units & is within one-half mile of a fixed-rail station. ☐

### Tier 2 Screening Criteria

| | |
|---|---|
| The net increase in daily trips < 250 trips | 978 Net Daily Trips |
| The net increase in daily VMT ≤ 0 | 9,161 Net Daily VMT |
| The proposed project consists of only retail land uses ≤ 50,000 square feet total. | 0.000 ksf |

**The proposed project is required to perform VMT analysis.**

Measuring the Miles

8/17/2020

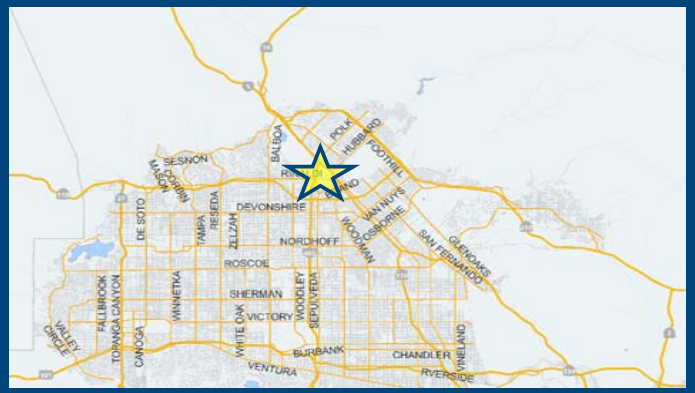
# CITY OF LOS ANGELES VMT CALCULATOR Version 1.3

## Project Information

**Project:** Ararat Home

**Scenario:**

**Address:** 15105 W MISSION HILLS ROAD, 91345




| Proposed Project Land Use Type | Value | Unit |
|---|---|---|
| Housing \| Multi-Family | 87 | DU |
| (custom) Assisted Living & Nursing Home \| Daily | 566 | Trips |
| (custom) Assisted Living & Nursing Home \| HBW- | 13 | Percent |
| (custom) Assisted Living & Nursing Home \| HBO-/ | 70 | Percent |
| (custom) Assisted Living & Nursing Home \| NHB-/ | 9 | Percent |
| (custom) Assisted Living & Nursing Home \| HBW- | 0 | Percent |
| (custom) Assisted Living & Nursing Home \| HBO-F | 0 | Percent |
| (custom) Assisted Living & Nursing Home \| NHB-F | 8 | Percent |
| (custom) Assisted Living & Nursing Home \| Daily | 0 | Residents |
| (custom) Assisted Living & Nursing Home \| Daily | 70 | Employees |
| (custom) Assisted Living & Nursing Home \| Daily | Non-Retail | Retail/Non-Re |

## TDM Strategies

Select each section to show individual strategies
Use ☑ to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

| | Proposed Project | With Mitigation |
|---|---|---|
| **Max Home Based TDM Achieved?** | **No** | **No** |
| **Max Work Based TDM Achieved?** | **No** | **No** |

### A Parking

**Reduce Parking Supply** ☐ Proposed Prj ☐ Mitigation
- 100 — city code parking provision for the project site
- 74 — actual parking provision for the project site

**Unbundle Parking** ☐ Proposed Prj ☑ Mitigation
- 50 — monthly parking cost (dollar) for the project site

**Parking Cash-Out** ☐ Proposed Prj ☐ Mitigation
- 50 — percent of employees eligible

**Price Workplace Parking** ☐ Proposed Prj ☐ Mitigation
- 6.00 — daily parking charge (dollar)
- 50 — percent of employees subject to priced parking

**Residential Area Parking Permits** ☐ Proposed Prj ☐ Mitigation
- 200 — cost (dollar) of annual permit

### B Transit

### C Education & Encouragement

### D Commute Trip Reductions

### E Shared Mobility

### F Bicycle Infrastructure

### G Neighborhood Enhancement

## Analysis Results

| Proposed Project | With |
|---|---|
| **978** Daily Vehicle Trips | **895** Daily Vehicle Trips |
| **9,161** Daily VMT | **8,397** Daily VMT |
| **10.5** Household VMT per Capita | **9.2** Household VMT |
| **13.1** Work VMT per Employee | **13.1** Work VMT per Employee |

### Significant VMT Impact?

| | |
|---|---|
| **Household: Yes** Threshold = 9.2 15% Below APC | **Household: No** Threshold = 9.2 15% Below APC |
| **Work: No** Threshold = 15.0 15% Below APC | **Work: No** Threshold = 15.0 15% Below APC |

Measuring the Miles

8/17/2020

# CITY OF LOS ANGELES VMT CALCULATOR

## Report 1: Project & Analysis Overview

Date: August 17, 2020
Project Name: Ararat Home
Project Scenario:
Project Address: 15105 W MISSION HILLS ROAD, 91345

*Version 1.3*

| Project Information | | | |
|---|---|---|---|
| **Land Use Type** | | **Value** | **Units** |
| **Housing** | *Single Family* | *0* | *DU* |
| | Multi Family | 87 | DU |
| | *Townhouse* | *0* | *DU* |
| | *Hotel* | *0* | *Rooms* |
| | *Motel* | *0* | *Rooms* |
| *Affordable Housing* | *Family* | *0* | *DU* |
| | *Senior* | *0* | *DU* |
| | *Special Needs* | *0* | *DU* |
| | *Permanent Supportive* | *0* | *DU* |
| *Retail* | *General Retail* | *0.000* | *ksf* |
| | *Furniture Store* | *0.000* | *ksf* |
| | *Pharmacy/Drugstore* | *0.000* | *ksf* |
| | *Supermarket* | *0.000* | *ksf* |
| | *Bank* | *0.000* | *ksf* |
| | *Health Club* | *0.000* | *ksf* |
| | *High-Turnover Sit-Down Restaurant* | *0.000* | *ksf* |
| | *Fast-Food Restaurant* | *0.000* | *ksf* |
| | *Quality Restaurant* | *0.000* | *ksf* |
| | *Auto Repair* | *0.000* | *ksf* |
| | *Home Improvement* | *0.000* | *ksf* |
| | *Free-Standing Discount* | *0.000* | *ksf* |
| | *Movie Theater* | *0* | *Seats* |
| *Office* | *General Office* | *0.000* | *ksf* |
| | *Medical Office* | *0.000* | *ksf* |
| *Industrial* | *Light Industrial* | *0.000* | *ksf* |
| | *Manufacturing* | *0.000* | *ksf* |
| | *Warehousing/Self-Storage* | *0.000* | *ksf* |
| *School* | *University* | *0* | *Students* |
| | *High School* | *0* | *Students* |
| | *Middle School* | *0* | *Students* |
| | *Elementary* | *0* | *Students* |
| | *Private School (K-12)* | *0* | *Students* |
| **Other** | Assisted Living & Nursing Hom | 566 | Trips |

## Analysis Results

Total Employees: 70
Total Population: 196

| ***Proposed Project*** | | ***With Mitigation*** | |
|---|---|---|---|
| **978** | **Daily Vehicle Trips** | **895** | **Daily Vehicle Trips** |
| **9,161** | **Daily VMT** | **8,397** | **Daily VMT** |
| **10.5** | **Household VMT per Capita** | **9.2** | **Household VMT per Capita** |
| **13.1** | **Work VMT per Employee** | **13.1** | **Work VMT per Employee** |

## Significant VMT Impact?

## APC: North Valley

Impact Threshold: 15% Below APC Average
Household = 9.2
Work = 15.0

| ***Proposed Project*** | | ***With Mitigation*** | |
|---|---|---|---|
| **VMT Threshold** | **Impact** | **VMT Threshold** | **Impact** |
| Household > 9.2 | Yes | Household > 9.2 | No |
| Work > 15.0 | No | Work > 15.0 | No |

# CITY OF LOS ANGELES VMT CALCULATOR

**Report 2: TDM Inputs**

Date: August 17, 2020
Project Name: Ararat Home
Project Scenario:
Project Address: 15105 W MISSION HILLS ROAD, 91345

*Version 1.3*

## TDM Strategy Inputs

| Strategy Type | | Description | Proposed Project | Mitigations |
|---|---|---|---|---|
| Parking | Reduce parking supply | City code parking provision (spaces) | 0 | 0 |
| | | Actual parking provision (spaces) | 0 | 0 |
| | Unbundle parking | Monthly cost for parking ($) | $0 | $50 |
| | Parking cash-out | Employees eligible (%) | 0% | 0% |
| | Price workplace parking | Daily parking charge ($) | $0.00 | $0.00 |
| | | Employees subject to priced parking (%) | 0% | 0% |
| | Residential area parking permits | Cost of annual permit ($) | $0 | $0 |

(cont. on following page)

## TDM Strategy Inputs, Cont.

| Strategy Type | | Description | Proposed Project | Mitigations |
|---|---|---|---|---|
| Transit | Reduce transit headways | Reduction in headways (increase in frequency) (%) | 0% | 0% |
| | | Existing transit mode share (as a percent of total daily trips) (%) | 0% | 0% |
| | | Lines within project site improved (<50%, >=50%) | 0 | 0 |
| | Implement neighborhood shuttle | Degree of implementation (low, medium, high) | 0 | 0 |
| | | Employees and residents eligible (%) | 0% | 0% |
| | Transit subsidies | Employees and residents eligible (%) | 0% | 0% |
| | | Amount of transit subsidy per passenger (daily equivalent) ($) | $0.00 | $0.00 |
| Education & Encouragement | Voluntary travel behavior change program | Employees and residents participating (%) | 0% | 100% |
| | Promotions and marketing | Employees and residents participating (%) | 0% | 0% |

(cont. on following page)

## TDM Strategy Inputs, Cont.

| Strategy Type | | Description | Proposed Project | Mitigations |
|---|---|---|---|---|
| Commute Trip Reductions | Required commute trip reduction program | Employees participating (%) | 0% | 0% |
| | Alternative Work Schedules and | Employees participating (%) | 0% | 0% |
| | Telecommute | Type of program | 0 | 0 |
| | Employer sponsored vanpool or shuttle | Degree of implementation (low, medium, high) | 0 | 0 |
| | | Employees eligible (%) | 0% | 0% |
| | | Employer size (small, medium, large) | 0 | 0 |
| | Ride-share program | Employees eligible (%) | 0% | 0% |
| Shared Mobility | Car share | Car share project setting (Urban, Suburban, All Other) | 0 | 0 |
| | Bike share | Within 600 feet of existing bike share station - OR- implementing new bike share station (Yes/No) | 0 | 0 |
| | School carpool program | Level of implementation (Low, Medium, High) | 0 | 0 |

(cont. on following page)

## TDM Strategy Inputs, Cont.

| Strategy Type | | Description | Proposed Project | Mitigations |
|---|---|---|---|---|
| Bicycle Infrastructure | Implement/improve on-street bicycle facility | Provide bicycle facility along site (Yes/No) | 0 | 0 |
| | Include Bike parking per LAMC | Meets City Bike Parking Code (Yes/No) | 0 | Yes |
| | Include secure bike parking and showers | Includes indoor bike parking/lockers, showers, & repair station (Yes/No) | 0 | Yes |
| Neighborhood Enhancement | Traffic calming improvements | Streets with traffic calming improvements (%) | 0% | 0% |
| | | Intersections with traffic calming improvements (%) | 0% | 0% |
| | Pedestrian network improvements | Included (within project and connecting off-site/within project only) | 0 | within project and connecting off-site |

# CITY OF LOS ANGELES VMT CALCULATOR

**Report 3: TDM Outputs**

Date: August 17, 2020
Project Name: Ararat Home
Project Scenario:
Project Address: 15105 W MISSION HILLS ROAD, 91345

*Version 1.3*

## TDM Adjustments by Trip Purpose & Strategy

**Place type: Suburban**

| | | *Home Based Work Production* | | *Home Based Work Attraction* | | *Home Based Other Production* | | *Home Based Other Attraction* | | *Non-Home Based Other Production* | | *Non-Home Based Other Attraction* | | *Source* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | |
| **Parking** | Reduce parking supply | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | TDM Strategy Appendix, Parking sections 1 - 5 |
| | Unbundle parking | 0% | 6% | 0% | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 0% | 0% | |
| | Parking cash-out | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| | Price workplace parking | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| | Residential area parking permits | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| **Transit** | Reduce transit headways | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | TDM Strategy Appendix, Transit sections 1 - 3 |
| | Implement neighborhood shuttle | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| | Transit subsidies | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| **Education & Encouragement** | Voluntary travel behavior change program | 0% | 4% | 0% | 4% | 0% | 4% | 0% | 4% | 0% | 4% | 0% | 4% | TDM Strategy Appendix, Education & Encouragement sections 1 - 2 |
| | Promotions and marketing | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| **Commute Trip Reductions** | Required commute trip reduction program | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | TDM Strategy Appendix, Commute Trip Reductions sections 1 - 4 |
| | Alternative Work Schedules and Telecommute Program | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| | Employer sponsored vanpool or shuttle | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| | Ride-share program | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| **Shared Mobility** | Car-share | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | TDM Strategy Appendix, Shared Mobility sections 1 - 3 |
| | Bike share | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| | School carpool program | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |

## TDM Adjustments by Trip Purpose & Strategy, Cont.

**Place type: Suburban**

| | | *Home Based Work Production* | | *Home Based Work Attraction* | | *Home Based Other Production* | | *Home Based Other Attraction* | | *Non-Home Based Other Production* | | *Non-Home Based Other Attraction* | | *Source* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | |
| **Bicycle Infrastructure** | Implement/ Improve on-street bicycle facility | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | TDM Strategy Appendix, Bicycle Infrastructure sections 1 - 3 |
| | Include Bike parking per LAMC | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.6% | |
| | Include secure bike parking and showers | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.6% | 0.0% | 0.6% | |
| **Neighborhood Enhancement** | Traffic calming improvements | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | TDM Strategy Appendix, Neighborhood Enhancement |
| | Pedestrian network improvements | 0.0% | 2.0% | 0.0% | 2.0% | 0.0% | 2.0% | 0.0% | 2.0% | 0.0% | 2.0% | 0.0% | 2.0% | |

## Final Combined & Maximum TDM Effect

| | *Home Based Work Production* | | *Home Based Work Attraction* | | *Home Based Other Production* | | *Home Based Other Attraction* | | *Non-Home Based Other Production* | | *Non-Home Based Other Attraction* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated | Proposed | Mitigated |
| **COMBINED TOTAL** | 0% | 13% | 0% | 7% | 0% | 13% | 0% | 7% | 0% | 7% | 0% | 7% |
| **MAX. TDM EFFECT** | 0% | 13% | 0% | 7% | 0% | 13% | 0% | 7% | 0% | 7% | 0% | 7% |

***= Minimum (X%, 1-[(1-A)*(1-B)…])***
*where X%=*

| | | |
|---|---|---|
| **PLACE TYPE MAX:** | *urban* | *75%* |
| | *compact infill* | *40%* |
| | *suburban center* | *20%* |
| | suburban | *15%* |

Note: [1-[(1-A)*(1-B)…]] reflects the dampened combined effectiveness of TDM Strategies (e.g., A, B,…). See the TDM Strategy Appendix (*Transportation Assessment Guidelines Attachment G)* for further discussion of dampening.

# CITY OF LOS ANGELES VMT CALCULATOR

## Report 4: MXD Methodology

Date: August 17, 2020
Project Name: Ararat Home
Project Scenario:
Project Address: 15105 W MISSION HILLS ROAD, 91345

*Version 1.3*

### MXD Methodology - Project Without TDM

| | Unadjusted Trips | MXD Adjustment | MXD Trips | Average Trip Length | Unadjusted VMT | MXD VMT |
|---|---|---|---|---|---|---|
| Home Based Work Production | 78 | -12.8% | 68 | 10.9 | 850 | 741 |
| Home Based Other Production | 216 | -16.7% | 180 | 7.3 | 1,577 | 1,314 |
| Non-Home Based Other Production | 146 | -0.7% | 145 | 9.2 | 1,343 | 1,334 |
| Home-Based Work Attraction | 74 | -9.5% | 67 | 13.7 | 1,014 | 918 |
| Home-Based Other Attraction | 499 | -11.0% | 444 | 9.0 | 4,491 | 3,996 |
| Non-Home Based Other Attraction | 75 | -1.3% | 74 | 11.6 | 870 | 858 |

### MXD Methodology with TDM Measures

| | *Proposed Project* | | | *Project with Mitigation Measures* | | |
|---|---|---|---|---|---|---|
| | TDM Adjustment | Project Trips | Project VMT | TDM Adjustment | Mitigated Trips | Mitigated VMT |
| Home Based Work Production | 0.0% | 68 | 741 | -12.7% | 59 | 647 |
| Home Based Other Production | 0.0% | 180 | 1,314 | -12.7% | 157 | 1,148 |
| Non-Home Based Other Production | 0.0% | 145 | 1,334 | -7.1% | 135 | 1,239 |
| Home-Based Work Attraction | 0.0% | 67 | 918 | -7.1% | 62 | 853 |
| Home-Based Other Attraction | 0.0% | 444 | 3,996 | -7.1% | 413 | 3,713 |
| Non-Home Based Other Attraction | 0.0% | 74 | 858 | -7.1% | 69 | 797 |

### MXD VMT Methodology Per Capita & Per Employee

Total Population: 196
Total Employees: 70
APC: North Valley

| | *Proposed Project* | *Project with Mitigation Measures* |
|---|---|---|
| *Total Home Based Production VMT* | **2,055** | **1,795** |
| *Total Home Based Work Attraction VMT* | **918** | **853** |
| *Total Home Based VMT Per Capita* | **10.5** | **9.2** |
| *Total Work Based VMT Per Employee* | **13.1** | **13.1** |

# *Appendix B*

Manual Traffic Counts

# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

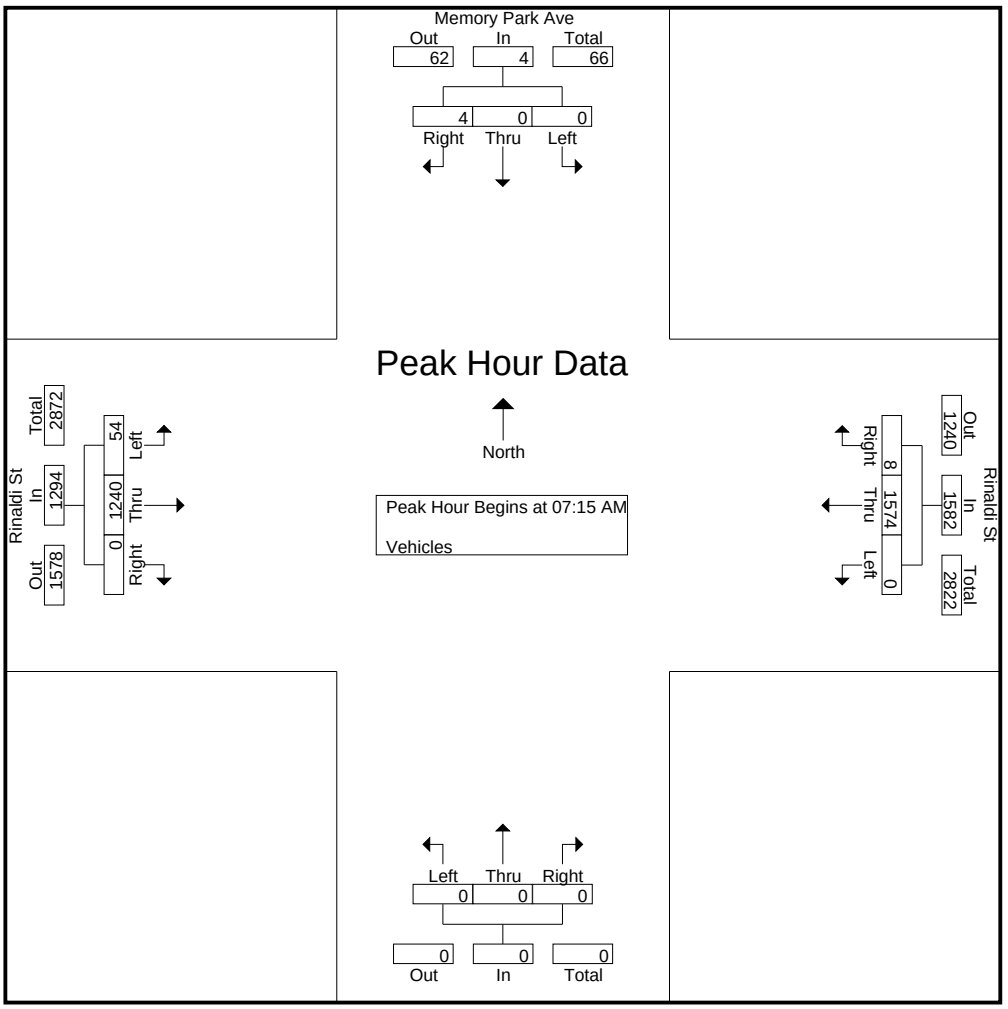
File Name : MemoryPark_Rinaldi
Site Code : 00000000
Start Date : 11/6/2019
Page No : 1

**Groups Printed- Vehicles**

| | Memory Park Ave Southbound | | | Rinaldi St Westbound | | | Northbound | | | Rinaldi St Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 332 | 1 | 0 | 0 | 0 | 11 | 193 | 0 | 537 |
| 07:15 AM | 0 | 0 | 2 | 0 | 346 | 4 | 0 | 0 | 0 | 11 | 269 | 0 | 632 |
| 07:30 AM | 0 | 0 | 1 | 0 | 472 | 0 | 0 | 0 | 0 | 14 | 298 | 0 | 785 |
| 07:45 AM | 0 | 0 | 0 | 0 | 410 | 2 | 0 | 0 | 0 | 11 | 348 | 0 | 771 |
| Total | 0 | 0 | 3 | 0 | 1560 | 7 | 0 | 0 | 0 | 47 | 1108 | 0 | 2725 |
| | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 1 | 0 | 346 | 2 | 0 | 0 | 0 | 18 | 325 | 0 | 692 |
| 08:15 AM | 0 | 0 | 0 | 0 | 225 | 3 | 0 | 0 | 0 | 23 | 347 | 0 | 598 |
| 08:30 AM | 0 | 0 | 1 | 0 | 253 | 1 | 0 | 0 | 0 | 7 | 227 | 0 | 489 |
| 08:45 AM | 0 | 0 | 0 | 0 | 177 | 0 | 0 | 0 | 0 | 7 | 226 | 0 | 410 |
| Total | 0 | 0 | 2 | 0 | 1001 | 6 | 0 | 0 | 0 | 55 | 1125 | 0 | 2189 |
| | | | | | | | | | | | | | |
| 09:00 AM | 1 | 0 | 0 | 0 | 208 | 3 | 0 | 0 | 0 | 2 | 177 | 0 | 391 |
| 09:15 AM | 0 | 0 | 3 | 0 | 211 | 1 | 0 | 0 | 0 | 3 | 174 | 0 | 392 |
| 09:30 AM | 1 | 0 | 2 | 0 | 156 | 4 | 0 | 0 | 0 | 3 | 189 | 0 | 355 |
| 09:45 AM | 0 | 0 | 2 | 0 | 214 | 1 | 0 | 0 | 0 | 1 | 187 | 0 | 405 |
| Total | 2 | 0 | 7 | 0 | 789 | 9 | 0 | 0 | 0 | 9 | 727 | 0 | 1543 |
| | | | | | | | | | | | | | |
| 03:00 PM | 0 | 0 | 4 | 0 | 301 | 3 | 0 | 0 | 0 | 4 | 428 | 0 | 740 |
| 03:15 PM | 0 | 0 | 0 | 0 | 233 | 2 | 0 | 0 | 0 | 2 | 345 | 0 | 582 |
| 03:30 PM | 1 | 0 | 1 | 0 | 250 | 2 | 0 | 0 | 0 | 2 | 389 | 0 | 645 |
| 03:45 PM | 0 | 0 | 1 | 0 | 245 | 3 | 0 | 0 | 0 | 7 | 389 | 0 | 645 |
| Total | 1 | 0 | 6 | 0 | 1029 | 10 | 0 | 0 | 0 | 15 | 1551 | 0 | 2612 |
| | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 2 | 0 | 248 | 1 | 0 | 0 | 0 | 3 | 383 | 0 | 637 |
| 04:15 PM | 2 | 0 | 4 | 0 | 247 | 6 | 0 | 0 | 0 | 12 | 363 | 0 | 634 |
| 04:30 PM | 3 | 0 | 17 | 0 | 252 | 4 | 0 | 0 | 0 | 5 | 412 | 0 | 693 |
| 04:45 PM | 2 | 0 | 3 | 0 | 233 | 4 | 0 | 0 | 0 | 11 | 445 | 0 | 698 |
| Total | 7 | 0 | 26 | 0 | 980 | 15 | 0 | 0 | 0 | 31 | 1603 | 0 | 2662 |
| | | | | | | | | | | | | | |
| 05:00 PM | 3 | 0 | 1 | 0 | 266 | 3 | 0 | 0 | 0 | 7 | 439 | 0 | 719 |
| 05:15 PM | 1 | 0 | 4 | 0 | 309 | 6 | 0 | 0 | 0 | 5 | 421 | 0 | 746 |
| 05:30 PM | 0 | 0 | 2 | 0 | 229 | 3 | 0 | 0 | 0 | 2 | 467 | 4 | 707 |
| 05:45 PM | 1 | 0 | 5 | 0 | 200 | 8 | 0 | 0 | 0 | 5 | 477 | 0 | 696 |
| Total | 5 | 0 | 12 | 0 | 1004 | 20 | 0 | 0 | 0 | 19 | 1804 | 4 | 2868 |
| | | | | | | | | | | | | | |
| Grand Total | 15 | 0 | 56 | 0 | 6363 | 67 | 0 | 0 | 0 | 176 | 7918 | 4 | 14599 |
| Apprch % | 21.1 | 0 | 78.9 | 0 | 99 | 1 | 0 | 0 | 0 | 2.2 | 97.8 | 0 | |
| Total % | 0.1 | 0 | 0.4 | 0 | 43.6 | 0.5 | 0 | 0 | 0 | 1.2 | 54.2 | 0 | |

File Name : MemoryPark_Rinaldi
Site Code : 00000000
Start Date : 11/6/2019
Page No : 2

| | Memory Park Ave Southbound | | | | Rinaldi St Westbound | | | | Northbound | | | | Rinaldi St Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | **2** | **2** | 0 | 346 | **4** | 350 | 0 | 0 | 0 | 0 | 11 | 269 | 0 | 280 | 632 |
| 07:30 AM | 0 | 0 | 1 | 1 | 0 | **472** | 0 | **472** | 0 | 0 | 0 | 0 | 14 | 298 | 0 | 312 | **785** |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 410 | 2 | 412 | 0 | 0 | 0 | 0 | 11 | **348** | 0 | **359** | 771 |
| 08:00 AM | 0 | 0 | 1 | 1 | 0 | 346 | 2 | 348 | 0 | 0 | 0 | 0 | **18** | 325 | 0 | 343 | 692 |
| Total Volume | 0 | 0 | 4 | 4 | 0 | 1574 | 8 | 1582 | 0 | 0 | 0 | 0 | 54 | 1240 | 0 | 1294 | 2880 |
| % App. Total | 0 | 0 | 100 | | 0 | 99.5 | 0.5 | | 0 | 0 | 0 | | 4.2 | 95.8 | 0 | | |
| PHF | .000 | .000 | .500 | .500 | .000 | .834 | .500 | .838 | .000 | .000 | .000 | .000 | .750 | .891 | .000 | .901 | .917 |

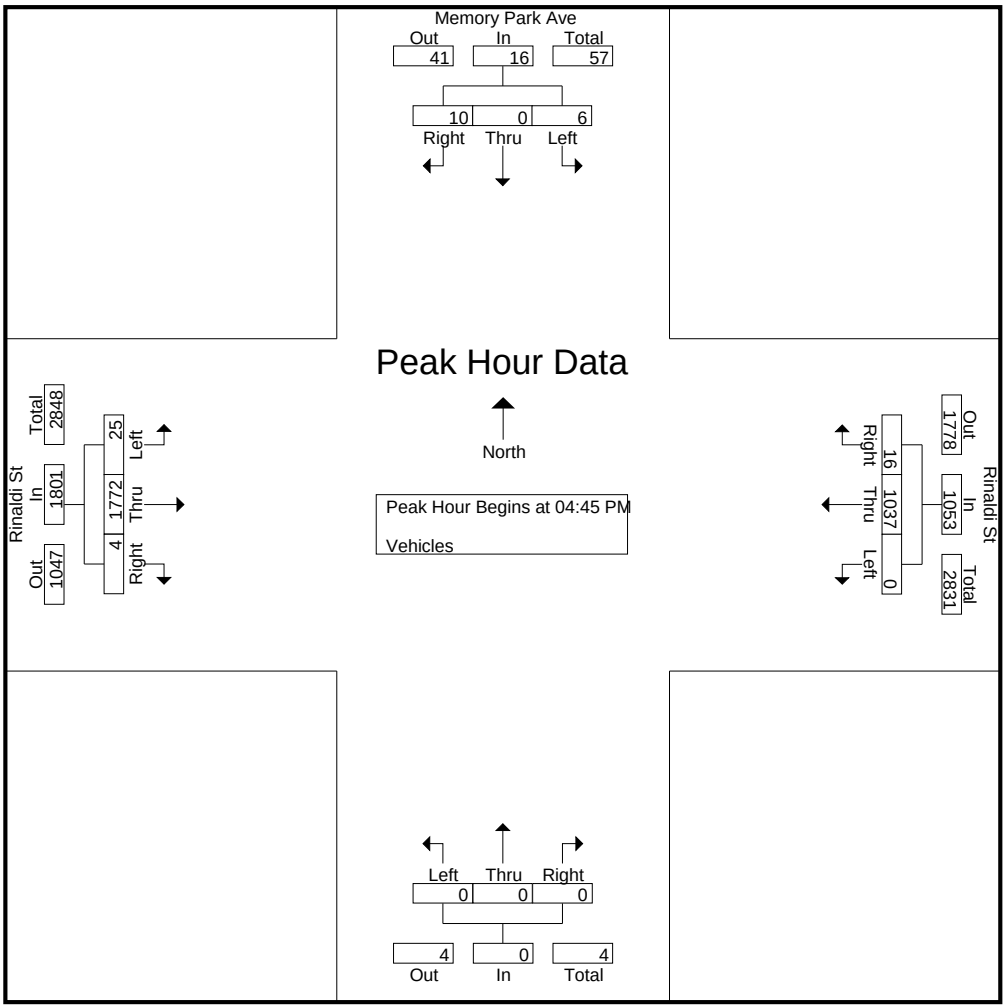


# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

File Name : MemoryPark_Rinaldi
Site Code : 00000000
Start Date : 11/6/2019
Page No : 3

| | Memory Park Ave Southbound | | | | Rinaldi St Westbound | | | | Northbound | | | | Rinaldi St Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 2 | 0 | 3 | **5** | 0 | 233 | 4 | 237 | 0 | 0 | 0 | 0 | **11** | 445 | 0 | 456 | 698 |
| 05:00 PM | **3** | 0 | 1 | 4 | 0 | 266 | 3 | 269 | 0 | 0 | 0 | 0 | 7 | 439 | 0 | 446 | 719 |
| 05:15 PM | 1 | 0 | **4** | 5 | 0 | **309** | **6** | **315** | 0 | 0 | 0 | 0 | 5 | 421 | 0 | 426 | **746** |
| 05:30 PM | 0 | 0 | 2 | 2 | 0 | 229 | 3 | 232 | 0 | 0 | 0 | 0 | 2 | **467** | **4** | **473** | 707 |
| Total Volume | 6 | 0 | 10 | 16 | 0 | 1037 | 16 | 1053 | 0 | 0 | 0 | 0 | 25 | 1772 | 4 | 1801 | 2870 |
| % App. Total | 37.5 | 0 | 62.5 | | 0 | 98.5 | 1.5 | | 0 | 0 | 0 | | 1.4 | 98.4 | 0.2 | | |
| PHF | .500 | .000 | .625 | .800 | .000 | .839 | .667 | .836 | .000 | .000 | .000 | .000 | .568 | .949 | .250 | .952 | .962 |



# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

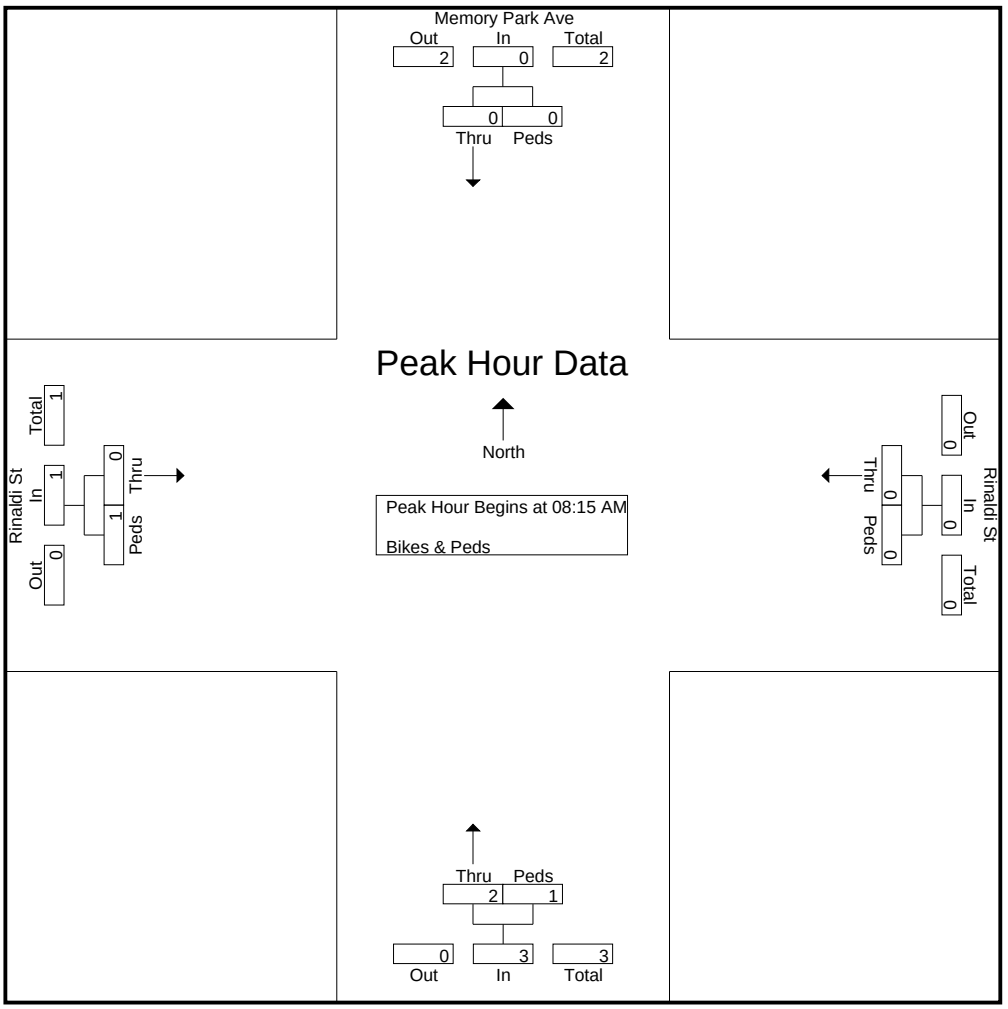
File Name : MemoryPark_Rinaldi_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 1

**Groups Printed- Bikes & Peds**

| | Memory Park Ave Southbound | | Rinaldi St Westbound | | Northbound | | Rinaldi St Eastbound | | |
|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Peds | Bikes | Peds | Bikes | Peds | Bikes | Peds | Int. Total |
| 07:15 AM | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 |
| Total | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 |
| 08:15 AM | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| Total | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 03:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 |
| Total | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 0 | 35 |
| 04:00 PM | 0 | 0 | 0 | 0 | 1 | 23 | 0 | 0 | 24 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 25 |
| 05:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 6 | 62 | 0 | 1 | 69 |
| Apprch % | 0 | 0 | 0 | 0 | 8.8 | 91.2 | 0 | 100 | |
| Total % | 0 | 0 | 0 | 0 | 8.7 | 89.9 | 0 | 1.4 | |

File Name : MemoryPark_Rinaldi_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 2

| | Memory Park Ave Southbound | | | Rinaldi St Westbound | | | Northbound | | | Rinaldi St Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:15 AM | | | | | | | | | | | | | |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | **2** | **1** | **3** | 0 | 0 | 0 | **3** |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **1** | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 1 | 1 | 4 |
| % App. Total | 0 | 0 | | 0 | 0 | | 66.7 | 33.3 | | 0 | 100 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .250 | .000 | .250 | .250 | .333 |

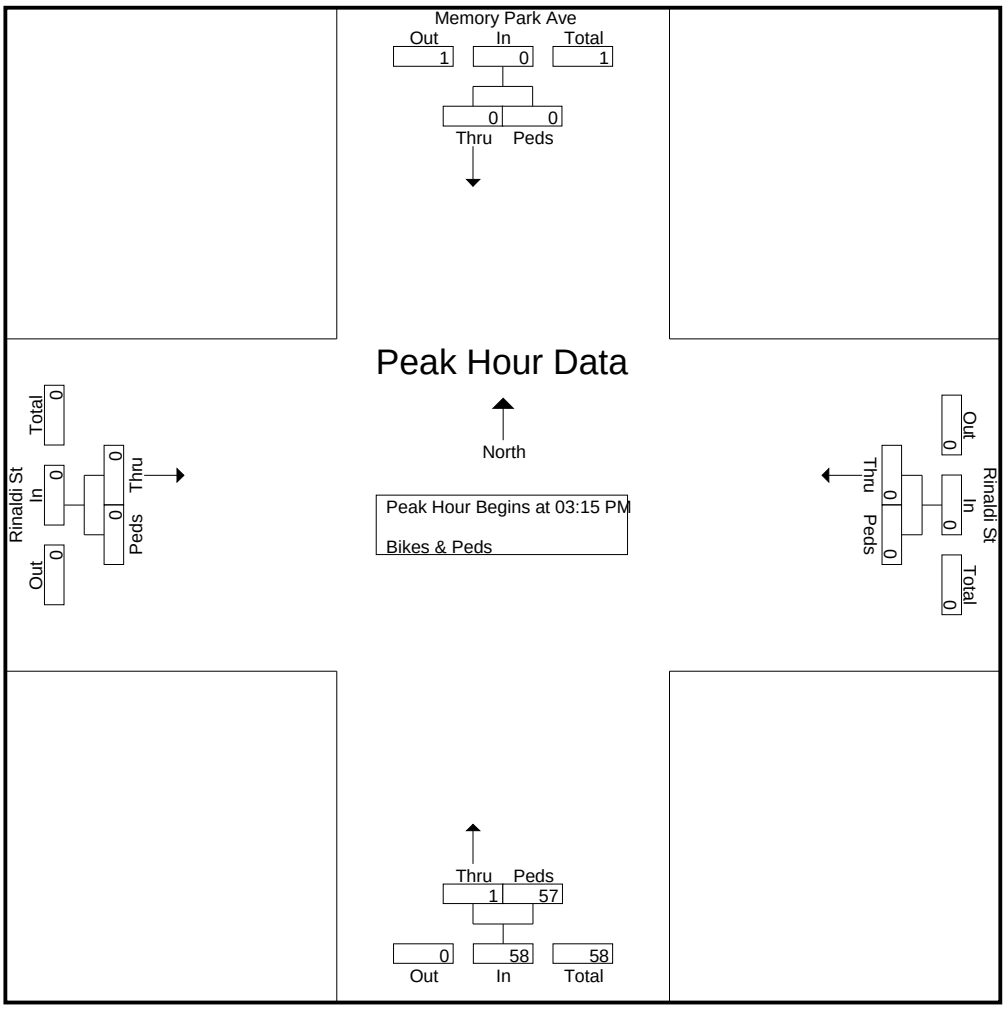


# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

File Name : MemoryPark_Rinaldi_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 3

| | Memory Park Ave Southbound | | | Rinaldi St Westbound | | | Northbound | | | Rinaldi St Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:15 PM | | | | | | | | | | | | | |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **25** | **25** | 0 | 0 | 0 | **25** |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 3 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 6 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | **1** | 23 | 24 | 0 | 0 | 0 | 24 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 57 | 58 | 0 | 0 | 0 | 58 |
| % App. Total | 0 | 0 | | 0 | 0 | | 1.7 | 98.3 | | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .570 | .580 | .000 | .000 | .000 | .580 |



# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

File Name : IndianHills_Rinaldi_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 1

**Groups Printed- Bikes & Peds**

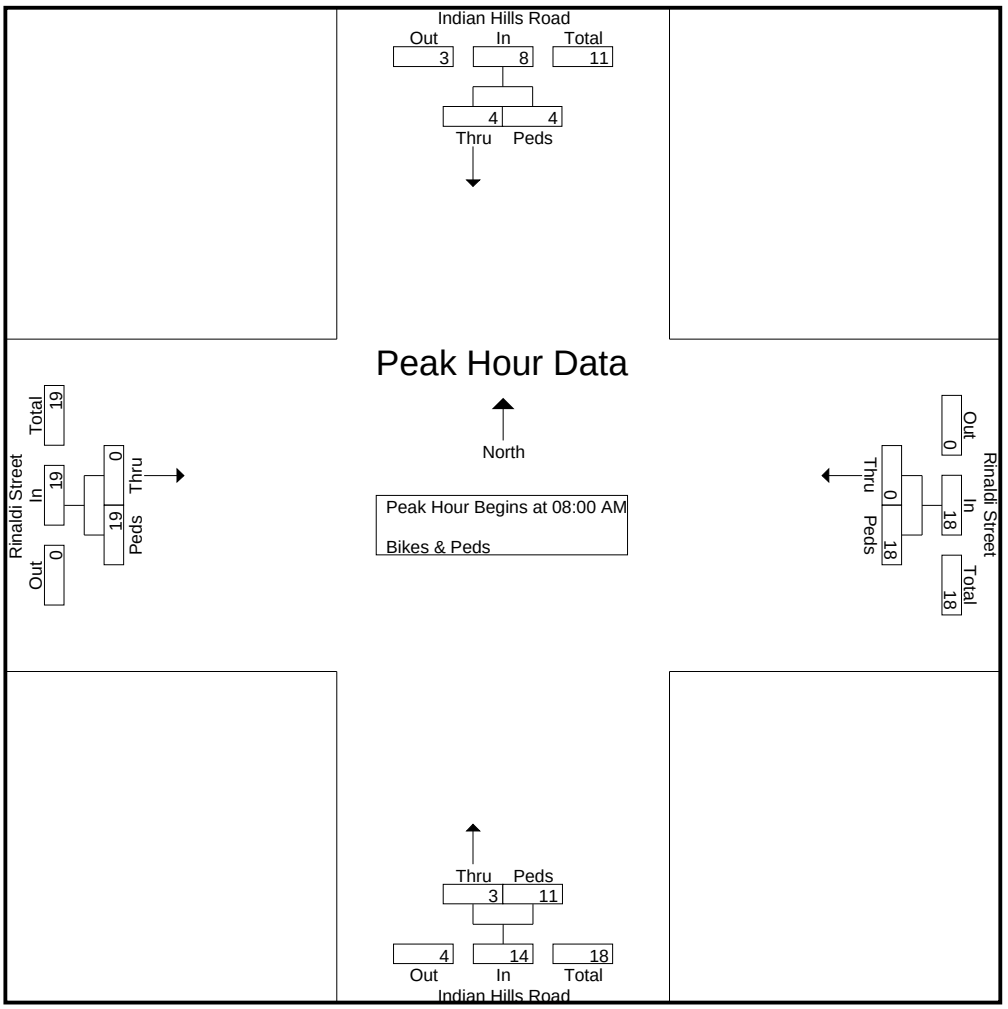
| | Indian Hills Road Southbound | | Rinaldi Street Westbound | | Indian Hills Road Northbound | | Rinaldi Street Eastbound | | |
|---|---|---|---|---|---|---|---|---|---|
| Start Time | Bikes | Peds | Bikes | Peds | Bikes | Peds | Bikes | Peds | Int. Total |
| 07:00 AM | 0 | 5 | 0 | 3 | 0 | 1 | 0 | 0 | 9 |
| 07:15 AM | 0 | 1 | 0 | 2 | 1 | 2 | 0 | 2 | 8 |
| 07:30 AM | 0 | 3 | 0 | 1 | 0 | 2 | 0 | 4 | 10 |
| 07:45 AM | 0 | 3 | 0 | 4 | 0 | 1 | 0 | 2 | 10 |
| Total | 0 | 12 | 0 | 10 | 1 | 6 | 0 | 8 | 37 |
| | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 3 | 1 | 5 | 0 | 6 | 15 |
| 08:15 AM | 4 | 2 | 0 | 6 | 2 | 3 | 0 | 5 | 22 |
| 08:30 AM | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 5 |
| 08:45 AM | 0 | 2 | 0 | 7 | 0 | 2 | 0 | 6 | 17 |
| Total | 4 | 4 | 0 | 18 | 3 | 11 | 0 | 19 | 59 |
| | | | | | | | | | |
| 09:00 AM | 0 | 3 | 0 | 3 | 0 | 0 | 1 | 6 | 13 |
| 09:15 AM | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 4 |
| 09:30 AM | 0 | 3 | 0 | 6 | 0 | 3 | 1 | 7 | 20 |
| 09:45 AM | 0 | 2 | 0 | 4 | 0 | 5 | 0 | 5 | 16 |
| Total | 1 | 8 | 0 | 14 | 0 | 10 | 2 | 18 | 53 |
| | | | | | | | | | |
| 03:00 PM | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 10 | 22 |
| 03:15 PM | 0 | 5 | 0 | 3 | 0 | 6 | 0 | 14 | 28 |
| 03:30 PM | 1 | 5 | 0 | 4 | 1 | 6 | 0 | 8 | 25 |
| 03:45 PM | 1 | 3 | 0 | 7 | 0 | 5 | 0 | 4 | 20 |
| Total | 2 | 13 | 0 | 20 | 1 | 23 | 0 | 36 | 95 |
| | | | | | | | | | |
| 04:00 PM | 0 | 6 | 0 | 15 | 0 | 11 | 0 | 9 | 41 |
| 04:15 PM | 0 | 3 | 0 | 4 | 0 | 6 | 0 | 4 | 17 |
| 04:30 PM | 0 | 1 | 0 | 4 | 0 | 8 | 0 | 3 | 16 |
| 04:45 PM | 3 | 6 | 0 | 6 | 2 | 4 | 0 | 4 | 25 |
| Total | 3 | 16 | 0 | 29 | 2 | 29 | 0 | 20 | 99 |
| | | | | | | | | | |
| 05:00 PM | 0 | 2 | 0 | 6 | 2 | 10 | 1 | 1 | 22 |
| 05:15 PM | 0 | 1 | 0 | 2 | 0 | 4 | 0 | 2 | 9 |
| 05:30 PM | 0 | 7 | 0 | 2 | 0 | 2 | 0 | 2 | 13 |
| 05:45 PM | 0 | 2 | 1 | 2 | 1 | 4 | 0 | 1 | 11 |
| Total | 0 | 12 | 1 | 12 | 3 | 20 | 1 | 6 | 55 |
| | | | | | | | | | |
| Grand Total | 10 | 65 | 1 | 103 | 10 | 99 | 3 | 107 | 398 |
| Apprch % | 13.3 | 86.7 | 1 | 99 | 9.2 | 90.8 | 2.7 | 97.3 | |
| Total % | 2.5 | 16.3 | 0.3 | 25.9 | 2.5 | 24.9 | 0.8 | 26.9 | |

# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

File Name : IndianHills_Rinaldi_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 2

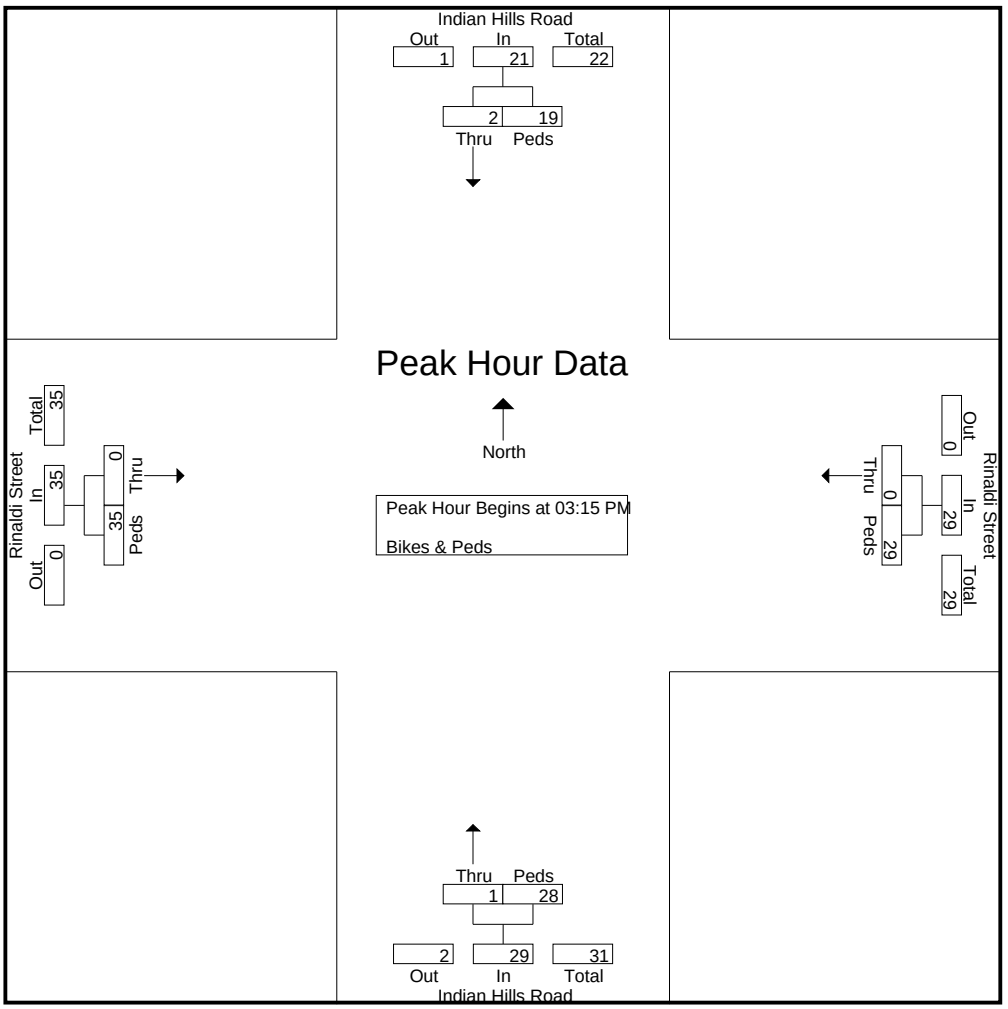
| | Indian Hills Road Southbound | | | Rinaldi Street Westbound | | | Indian Hills Road Northbound | | | Rinaldi Street Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:00 AM | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 3 | 3 | 1 | **5** | **6** | 0 | **6** | **6** | 15 |
| 08:15 AM | **4** | **2** | **6** | 0 | 6 | 6 | **2** | 3 | 5 | 0 | 5 | 5 | **22** |
| 08:30 AM | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 1 | 0 | 2 | 2 | 5 |
| 08:45 AM | 0 | 2 | 2 | 0 | **7** | **7** | 0 | 2 | 2 | 0 | 6 | 6 | 17 |
| Total Volume | 4 | 4 | 8 | 0 | 18 | 18 | 3 | 11 | 14 | 0 | 19 | 19 | 59 |
| % App. Total | 50 | 50 | | 0 | 100 | | 21.4 | 78.6 | | 0 | 100 | | |
| PHF | .250 | .500 | .333 | .000 | .643 | .643 | .375 | .550 | .583 | .000 | .792 | .792 | .670 |



**CITY TRAFFIC COUNTERS**
***WWW.CTCOUNTERS.COM***

File Name : IndianHills_Rinaldi_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 3

| | Indian Hills Road Southbound | | | Rinaldi Street Westbound | | | Indian Hills Road Northbound | | | Rinaldi Street Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:15 PM | | | | | | | | | | | | | |
| 03:15 PM | 0 | 5 | 5 | 0 | 3 | 3 | 0 | 6 | 6 | 0 | **14** | **14** | 28 |
| 03:30 PM | **1** | 5 | **6** | 0 | 4 | 4 | **1** | 6 | 7 | 0 | 8 | 8 | 25 |
| 03:45 PM | 1 | 3 | 4 | 0 | 7 | 7 | 0 | 5 | 5 | 0 | 4 | 4 | 20 |
| 04:00 PM | 0 | **6** | 6 | 0 | **15** | **15** | 0 | **11** | **11** | 0 | 9 | 9 | **41** |
| Total Volume | 2 | 19 | 21 | 0 | 29 | 29 | 1 | 28 | 29 | 0 | 35 | 35 | 114 |
| % App. Total | 9.5 | 90.5 | | 0 | 100 | | 3.4 | 96.6 | | 0 | 100 | | |
| PHF | .500 | .792 | .875 | .000 | .483 | .483 | .250 | .636 | .659 | .000 | .625 | .625 | .695 |



**File Name: IndianHills_Rinaldi**
**Site Code: 00000000**
**Start Date: 11/6/2019**
**Page No: 1**

Groups Printed- Vehicles

| | Indian Hills Road Southbound | | | Rinaldi Street Westbound | | | Indian Hills Road Northbound | | | Rinaldi Street Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 7:00 AM | 17 | 0 | 23 | 3 | 297 | 31 | 12 | 1 | 9 | 36 | 128 | 1 | 558 |
| 7:15 AM | 15 | 0 | 27 | 0 | 316 | 35 | 7 | 0 | 6 | 34 | 176 | 3 | 619 |
| 7:30 AM | 39 | 2 | 67 | 4 | 349 | 39 | 12 | 2 | 6 | 30 | 213 | 6 | 769 |
| 7:45 AM | 16 | 1 | 37 | 2 | 307 | 88 | 11 | 6 | 7 | 43 | 238 | 7 | 763 |
| Total | 87 | 3 | 154 | 9 | 1269 | 193 | 42 | 9 | 28 | 143 | 755 | 17 | 2709 |
| 8:00 AM | 17 | 0 | 30 | 3 | 258 | 82 | 5 | 4 | 6 | 43 | 280 | 13 | 741 |
| 8:15 AM | 10 | 2 | 21 | 3 | 193 | 53 | 11 | 1 | 3 | 54 | 258 | 2 | 611 |
| 8:30 AM | 26 | 2 | 19 | 6 | 223 | 56 | 2 | 4 | 4 | 60 | 182 | 3 | 587 |
| 8:45 AM | 23 | 2 | 21 | 4 | 164 | 48 | 4 | 1 | 4 | 52 | 163 | 1 | 487 |
| Total | 76 | 6 | 91 | 16 | 838 | 239 | 22 | 10 | 17 | 209 | 883 | 19 | 2426 |
| 9:00 AM | 19 | 0 | 19 | 1 | 177 | 30 | 8 | 1 | 1 | 38 | 116 | 4 | 414 |
| 9:15 AM | 19 | 0 | 29 | 8 | 173 | 36 | 6 | 2 | 2 | 39 | 116 | 0 | 430 |
| 9:30 AM | 19 | 0 | 16 | 5 | 139 | 38 | 5 | 0 | 6 | 47 | 135 | 0 | 410 |
| 9:45 AM | 23 | 1 | 41 | 3 | 178 | 34 | 11 | 0 | 5 | 55 | 127 | 0 | 478 |
| Total | 80 | 1 | 105 | 17 | 667 | 138 | 30 | 3 | 14 | 179 | 494 | 4 | 1732 |
| 3:00 PM | 69 | 0 | 39 | 6 | 215 | 20 | 3 | 1 | 3 | 28 | 345 | 0 | 729 |
| 3:15 PM | 61 | 1 | 50 | 8 | 181 | 24 | 13 | 0 | 6 | 31 | 300 | 6 | 681 |
| 3:30 PM | 54 | 1 | 41 | 4 | 179 | 19 | 4 | 0 | 5 | 24 | 354 | 4 | 689 |
| 3:45 PM | 46 | 0 | 48 | 4 | 149 | 21 | 10 | 0 | 6 | 26 | 367 | 2 | 679 |
| Total | 230 | 2 | 178 | 22 | 724 | 84 | 30 | 1 | 20 | 109 | 1366 | 12 | 2778 |
| 4:00 PM | 44 | 0 | 49 | 4 | 154 | 14 | 6 | 1 | 13 | 27 | 386 | 4 | 702 |
| 4:15 PM | 41 | 0 | 40 | 6 | 188 | 7 | 6 | 0 | 3 | 19 | 384 | 4 | 698 |
| 4:30 PM | 61 | 0 | 33 | 5 | 227 | 15 | 7 | 1 | 5 | 22 | 425 | 2 | 803 |
| 4:45 PM | 65 | 0 | 41 | 6 | 185 | 12 | 5 | 0 | 4 | 11 | 460 | 3 | 792 |
| Total | 211 | 0 | 163 | 21 | 754 | 48 | 24 | 2 | 25 | 79 | 1655 | 13 | 2995 |
| 5:00 PM | 89 | 0 | 51 | 10 | 184 | 22 | 6 | 0 | 7 | 17 | 449 | 3 | 838 |
| 5:15 PM | 63 | 1 | 55 | 5 | 203 | 8 | 7 | 0 | 3 | 15 | 447 | 3 | 810 |
| 5:30 PM | 42 | 0 | 27 | 5 | 216 | 17 | 3 | 1 | 3 | 19 | 447 | 6 | 786 |
| 5:45 PM | 30 | 0 | 21 | 5 | 189 | 15 | 5 | 0 | 4 | 21 | 442 | 3 | 735 |
| Total | 224 | 1 | 154 | 25 | 792 | 62 | 21 | 1 | 17 | 72 | 1785 | 15 | 3169 |
| Grand Total | 908 | 13 | 845 | 110 | 5044 | 764 | 169 | 26 | 121 | 791 | 6938 | 80 | 15809 |
| Apprch % | 51.4 | 0.7 | 47.8 | 1.9 | 85.2 | 12.9 | 53.5 | 8.2 | 38.3 | 10.1 | 88.8 | 1 | |
| Total % | 5.7 | 0.1 | 5.3 | 0.7 | 31.9 | 4.8 | 1.1 | 0.2 | 0.8 | 5 | 43.9 | 0.5 | |

**File Name: IndianHills_Rinaldi**
**Site Code: 00000000**
**Start Date: 11/6/2019**
**Page No: 2**

| | Indian Hills Road Southbound | | | | Rinaldi Street Westbound | | | | Indian Hills Road Northbound | | | | Rinaldi Street Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 7:15 AM | 15 | 0 | 27 | 42 | 0 | 316 | 35 | 351 | 7 | 0 | 6 | 13 | 34 | 176 | 3 | 213 | 619 |
| 7:30 AM | 39 | 2 | 67 | 108 | 4 | 349 | 39 | 392 | 12 | 2 | 6 | 20 | 30 | 213 | 6 | 249 | 769 |
| 7:45 AM | 16 | 1 | 37 | 54 | 2 | 307 | 88 | 397 | 11 | 6 | 7 | 24 | 43 | 238 | 7 | 288 | 763 |
| 8:00 AM | 17 | 0 | 30 | 47 | 3 | 258 | 82 | 343 | 5 | 4 | 6 | 15 | 43 | 280 | 13 | 336 | 741 |
| Total Volume | 87 | 3 | 161 | 251 | 9 | 1230 | 244 | 1483 | 35 | 12 | 25 | 72 | 150 | 907 | 29 | 1086 | 2892 |
| % App. Total | 34.7 | 1.2 | 64.1 | | 0.6 | 82.9 | 16.5 | | 48.6 | 16.7 | 34.7 | | 13.8 | 83.5 | 2.7 | | |
| PHF | 0.558 | 0.375 | 0.601 | 0.581 | 0.563 | 0.881 | 0.693 | 0.934 | 0.729 | 0.5 | 0.893 | 0.75 | 0.872 | 0.81 | 0.558 | 0.808 | 0.94 |

**File Name: IndianHills_Rinaldi**
**Site Code: 00000000**
**Start Date: 11/6/2019**
**Page No: 3**

| | Indian Hills Road Southbound | | | | Rinaldi Street Westbound | | | | Indian Hills Road Northbound | | | | Rinaldi Street Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| **Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1** | | | | | | | | | | | | | | | | | |
| **Peak Hour for Entire Intersection Begins at 04:30 PM** | | | | | | | | | | | | | | | | | |
| 4:30 PM | 61 | 0 | 33 | 94 | 5 | 227 | 15 | 247 | 7 | 1 | 5 | 13 | 22 | 425 | 2 | 449 | 803 |
| 4:45 PM | 65 | 0 | 41 | 106 | 6 | 185 | 12 | 203 | 5 | 0 | 4 | 9 | 11 | 460 | 3 | 474 | 792 |
| 5:00 PM | 89 | 0 | 51 | 140 | 10 | 184 | 22 | 216 | 6 | 0 | 7 | 13 | 17 | 449 | 3 | 469 | 838 |
| 5:15 PM | 63 | 1 | 55 | 119 | 5 | 203 | 8 | 216 | 7 | 0 | 3 | 10 | 15 | 447 | 3 | 465 | 810 |
| Total Volume | 278 | 1 | 180 | 459 | 26 | 799 | 57 | 882 | 25 | 1 | 19 | 45 | 65 | 1781 | 11 | 1857 | 3243 |
| % App. Total | 60.6 | 0.2 | 39.2 | | 2.9 | 90.6 | 6.5 | | 55.6 | 2.2 | 42.2 | | 3.5 | 95.9 | 0.6 | | |
| PHF | 0.781 | 0.25 | 0.818 | 0.82 | 0.65 | 0.88 | 0.648 | 0.893 | 0.893 | 0.25 | 0.679 | 0.865 | 0.739 | 0.968 | 0.917 | 0.979 | 0.967 |

# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

File Name : IndianHills_MissionHills
Site Code : 00000000
Start Date : 11/6/2019
Page No : 1

**Groups Printed- Vehicles**

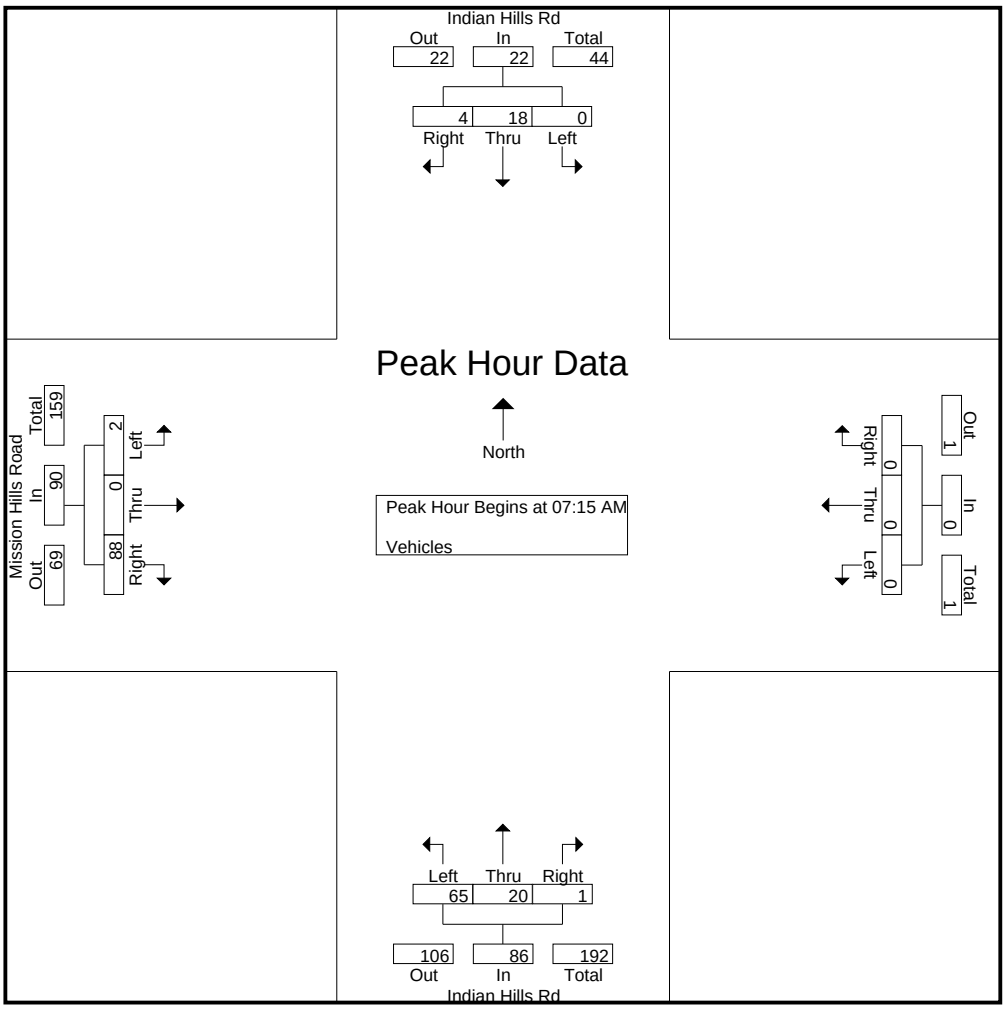
| | Indian Hills Rd Southbound | | | Westbound | | | Indian Hills Rd Northbound | | | Mission Hills Road Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 AM | 0 | 3 | 1 | 0 | 0 | 0 | 19 | 3 | 0 | 2 | 0 | 19 | 47 |
| 07:15 AM | 0 | 5 | 1 | 0 | 0 | 0 | 22 | 3 | 1 | 0 | 0 | 18 | 50 |
| 07:30 AM | 0 | 3 | 0 | 0 | 0 | 0 | 10 | 2 | 0 | 0 | 0 | 31 | 46 |
| 07:45 AM | 0 | 3 | 2 | 0 | 0 | 0 | 15 | 9 | 0 | 1 | 0 | 24 | 54 |
| Total | 0 | 14 | 4 | 0 | 0 | 0 | 66 | 17 | 1 | 3 | 0 | 92 | 197 |
| | | | | | | | | | | | | | |
| 08:00 AM | 0 | 7 | 1 | 0 | 0 | 0 | 18 | 6 | 0 | 1 | 0 | 15 | 48 |
| 08:15 AM | 0 | 2 | 0 | 0 | 0 | 0 | 17 | 4 | 0 | 0 | 0 | 14 | 37 |
| 08:30 AM | 0 | 3 | 1 | 0 | 0 | 0 | 23 | 2 | 0 | 0 | 0 | 18 | 47 |
| 08:45 AM | 0 | 2 | 0 | 0 | 0 | 0 | 12 | 6 | 0 | 1 | 0 | 7 | 28 |
| Total | 0 | 14 | 2 | 0 | 0 | 0 | 70 | 18 | 0 | 2 | 0 | 54 | 160 |
| | | | | | | | | | | | | | |
| 09:00 AM | 0 | 5 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 5 | 14 |
| 09:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 | 0 | 5 | 22 |
| 09:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 3 | 0 | 0 | 0 | 9 | 18 |
| 09:45 AM | 0 | 9 | 0 | 0 | 0 | 0 | 12 | 4 | 9 | 0 | 0 | 11 | 45 |
| Total | 0 | 16 | 0 | 0 | 0 | 0 | 31 | 13 | 9 | 0 | 0 | 30 | 99 |
| | | | | | | | | | | | | | |
| 03:00 PM | 0 | 4 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 55 | 73 |
| 03:15 PM | 0 | 3 | 0 | 0 | 0 | 0 | 15 | 2 | 0 | 0 | 0 | 42 | 62 |
| 03:30 PM | 0 | 5 | 1 | 0 | 0 | 0 | 9 | 2 | 0 | 0 | 0 | 34 | 51 |
| 03:45 PM | 0 | 5 | 1 | 0 | 0 | 0 | 5 | 3 | 0 | 1 | 0 | 29 | 44 |
| Total | 0 | 17 | 2 | 0 | 0 | 0 | 43 | 7 | 0 | 1 | 0 | 160 | 230 |
| | | | | | | | | | | | | | |
| 04:00 PM | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 23 | 35 |
| 04:15 PM | 0 | 5 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 23 | 34 |
| 04:30 PM | 0 | 3 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 1 | 0 | 27 | 43 |
| 04:45 PM | 0 | 9 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 20 | 34 |
| Total | 0 | 23 | 0 | 0 | 0 | 0 | 14 | 14 | 0 | 1 | 1 | 93 | 146 |
| | | | | | | | | | | | | | |
| 05:00 PM | 0 | 4 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 28 | 39 |
| 05:15 PM | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 32 | 39 |
| 05:30 PM | 0 | 4 | 0 | 0 | 0 | 0 | 7 | 4 | 0 | 0 | 0 | 22 | 37 |
| 05:45 PM | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 11 | 21 |
| Total | 0 | 13 | 0 | 0 | 0 | 0 | 18 | 12 | 0 | 0 | 0 | 93 | 136 |
| | | | | | | | | | | | | | |
| Grand Total | 0 | 97 | 8 | 0 | 0 | 0 | 242 | 81 | 10 | 7 | 1 | 522 | 968 |
| Apprch % | 0 | 92.4 | 7.6 | 0 | 0 | 0 | 72.7 | 24.3 | 3 | 1.3 | 0.2 | 98.5 | |
| Total % | 0 | 10 | 0.8 | 0 | 0 | 0 | 25 | 8.4 | 1 | 0.7 | 0.1 | 53.9 | |

# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

File Name : IndianHills_MissionHills
Site Code : 00000000
Start Date : 11/6/2019
Page No : 2

| | Indian Hills Rd Southbound | | | | Westbound | | | | Indian Hills Rd Northbound | | | | Mission Hills Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | **22** | 3 | **1** | **26** | 0 | 0 | 18 | 18 | 50 |
| 07:30 AM | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 10 | 2 | 0 | 12 | 0 | 0 | **31** | **31** | 46 |
| 07:45 AM | 0 | 3 | **2** | 5 | 0 | 0 | 0 | 0 | 15 | **9** | 0 | 24 | **1** | 0 | 24 | 25 | **54** |
| 08:00 AM | 0 | **7** | 1 | **8** | 0 | 0 | 0 | 0 | 18 | 6 | 0 | 24 | 1 | 0 | 15 | 16 | 48 |
| Total Volume | 0 | 18 | 4 | 22 | 0 | 0 | 0 | 0 | 65 | 20 | 1 | 86 | 2 | 0 | 88 | 90 | 198 |
| % App. Total | 0 | 81.8 | 18.2 | | 0 | 0 | 0 | | 75.6 | 23.3 | 1.2 | | 2.2 | 0 | 97.8 | | |
| PHF | .000 | .643 | .500 | .688 | .000 | .000 | .000 | .000 | .739 | .556 | .250 | .827 | .500 | .000 | .710 | .726 | .917 |

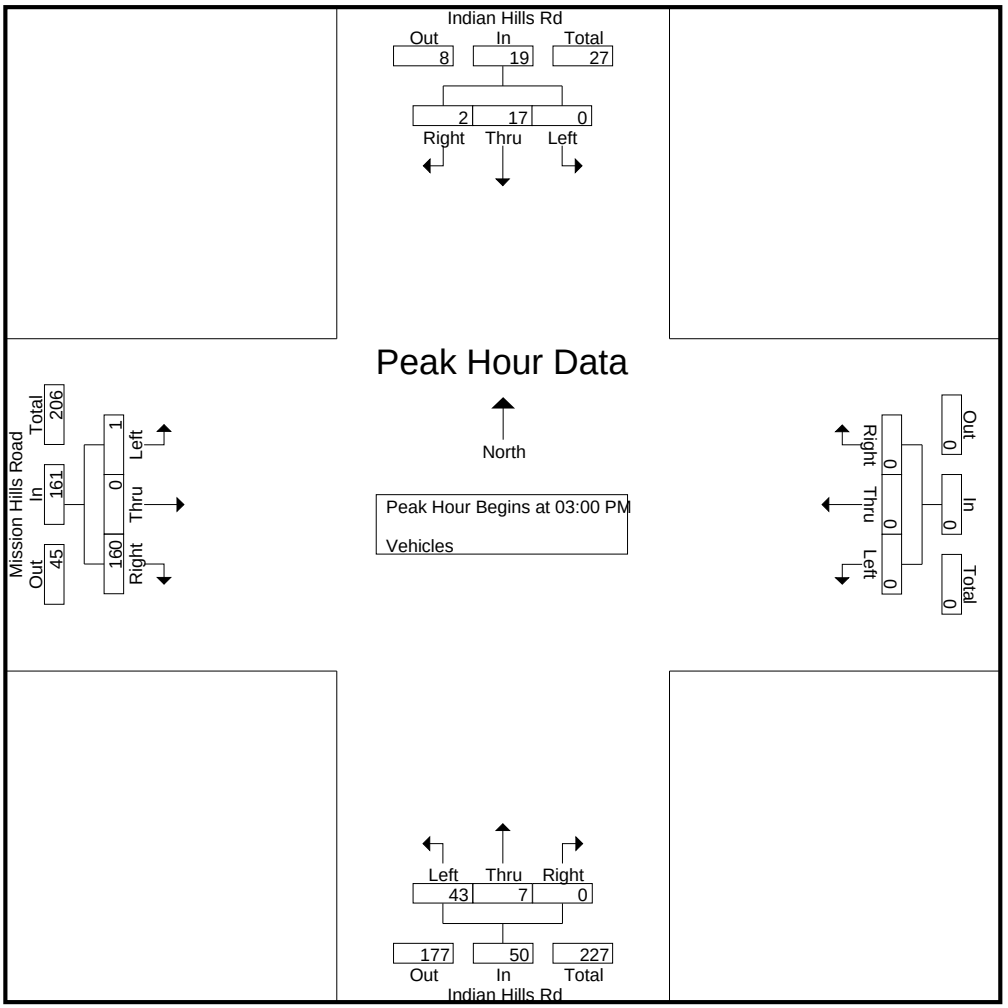


# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

File Name : IndianHills_MissionHills
Site Code : 00000000
Start Date : 11/6/2019
Page No : 3

| | Indian Hills Rd Southbound | | | | Westbound | | | | Indian Hills Rd Northbound | | | | Mission Hills Road Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:00 PM | | | | | | | | | | | | | | | | | |
| 03:00 PM | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 14 | 0 | 0 | **55** | **55** | **73** |
| 03:15 PM | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | **15** | 2 | 0 | **17** | 0 | 0 | 42 | 42 | 62 |
| 03:30 PM | 0 | **5** | **1** | **6** | 0 | 0 | 0 | 0 | 9 | 2 | 0 | 11 | 0 | 0 | 34 | 34 | 51 |
| 03:45 PM | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 5 | **3** | 0 | 8 | **1** | 0 | 29 | 30 | 44 |
| Total Volume | 0 | 17 | 2 | 19 | 0 | 0 | 0 | 0 | 43 | 7 | 0 | 50 | 1 | 0 | 160 | 161 | 230 |
| % App. Total | 0 | 89.5 | 10.5 | | 0 | 0 | 0 | | 86 | 14 | 0 | | 0.6 | 0 | 99.4 | | |
| PHF | .000 | .850 | .500 | .792 | .000 | .000 | .000 | .000 | .717 | .583 | .000 | .735 | .250 | .000 | .727 | .732 | .788 |



# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

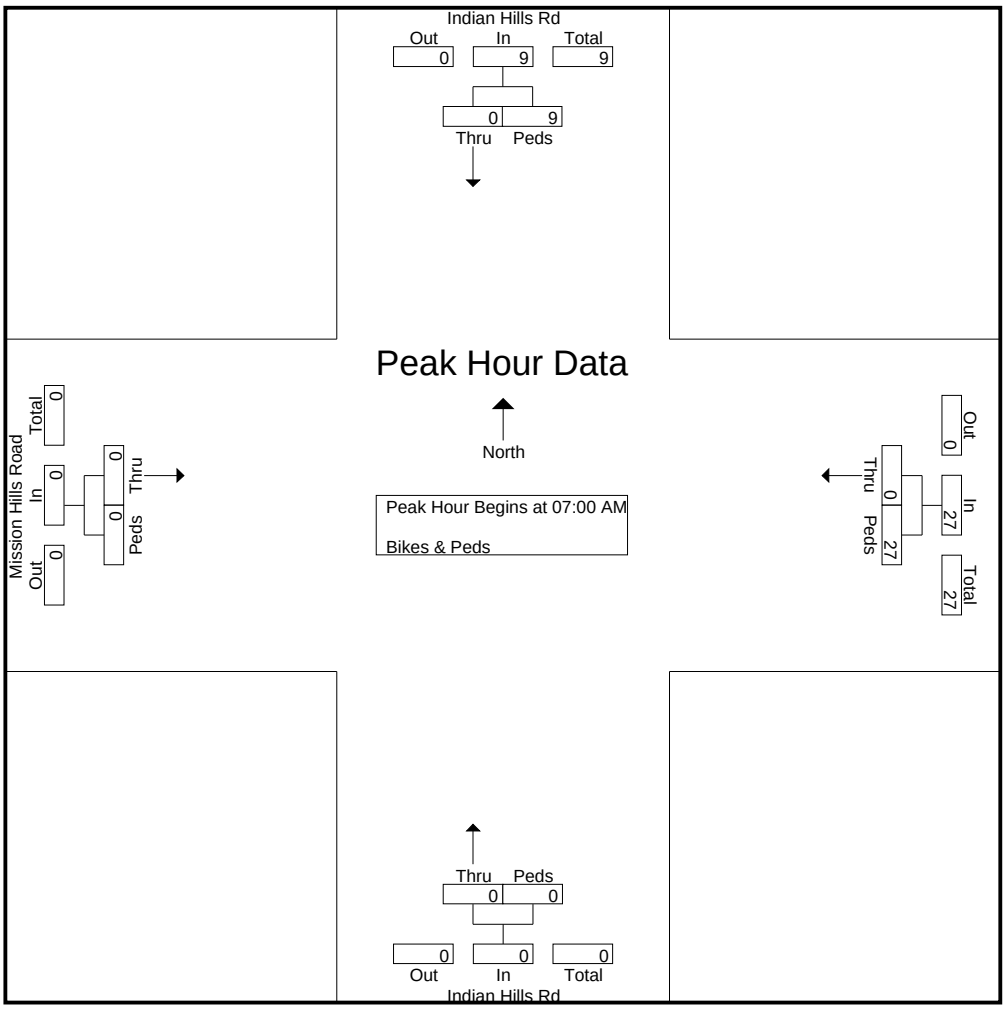
File Name : IndianHills_MissionHills_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 1

**Groups Printed- Bikes & Peds**

| | Indian Hills Rd Southbound | | Westbound | | Indian Hills Rd Northbound | | Mission Hills Road Eastbound | | |
|---|---|---|---|---|---|---|---|---|---|
| Start Time | Bikes | Peds | Bikes | Peds | Bikes | Peds | Bikes | Peds | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 |
| 07:15 AM | 0 | 5 | 0 | 7 | 0 | 0 | 0 | 0 | 12 |
| 07:30 AM | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 7 |
| 07:45 AM | 0 | 2 | 0 | 11 | 0 | 0 | 0 | 0 | 13 |
| Total | 0 | 9 | 0 | 27 | 0 | 0 | 0 | 0 | 36 |
| 08:15 AM | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| 08:30 AM | 0 | 3 | 0 | 6 | 0 | 0 | 0 | 0 | 9 |
| 08:45 AM | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 5 |
| Total | 0 | 8 | 0 | 10 | 0 | 0 | 0 | 0 | 18 |
| 09:00 AM | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 5 |
| 09:15 AM | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 5 |
| 09:30 AM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| 09:45 AM | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 9 |
| Total | 0 | 6 | 0 | 15 | 0 | 0 | 0 | 0 | 21 |
| 03:00 PM | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| 03:15 PM | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 6 |
| 03:30 PM | 0 | 8 | 0 | 3 | 0 | 0 | 0 | 0 | 11 |
| 03:45 PM | 0 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 10 |
| Total | 0 | 17 | 0 | 13 | 0 | 0 | 0 | 0 | 30 |
| 04:00 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 04:30 PM | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 5 |
| 04:45 PM | 0 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 7 |
| Total | 0 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 14 |
| 05:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 05:30 PM | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 3 |
| Total | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 4 |
| Grand Total | 0 | 48 | 1 | 74 | 0 | 0 | 0 | 0 | 123 |
| Apprch % | 0 | 100 | 1.3 | 98.7 | 0 | 0 | 0 | 0 | |
| Total % | 0 | 39 | 0.8 | 60.2 | 0 | 0 | 0 | 0 | |

File Name : IndianHills_MissionHills_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 2

| | Indian Hills Rd Southbound | | | Westbound | | | Indian Hills Rd Northbound | | | Mission Hills Road Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | |
| 07:00 AM | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 07:15 AM | 0 | **5** | **5** | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 07:30 AM | 0 | 2 | 2 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 07:45 AM | 0 | 2 | 2 | 0 | **11** | **11** | 0 | 0 | 0 | 0 | 0 | 0 | **13** |
| Total Volume | 0 | 9 | 9 | 0 | 27 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| % App. Total | 0 | 100 | | 0 | 100 | | 0 | 0 | | 0 | 0 | | |
| PHF | .000 | .450 | .450 | .000 | .614 | .614 | .000 | .000 | .000 | .000 | .000 | .000 | .692 |

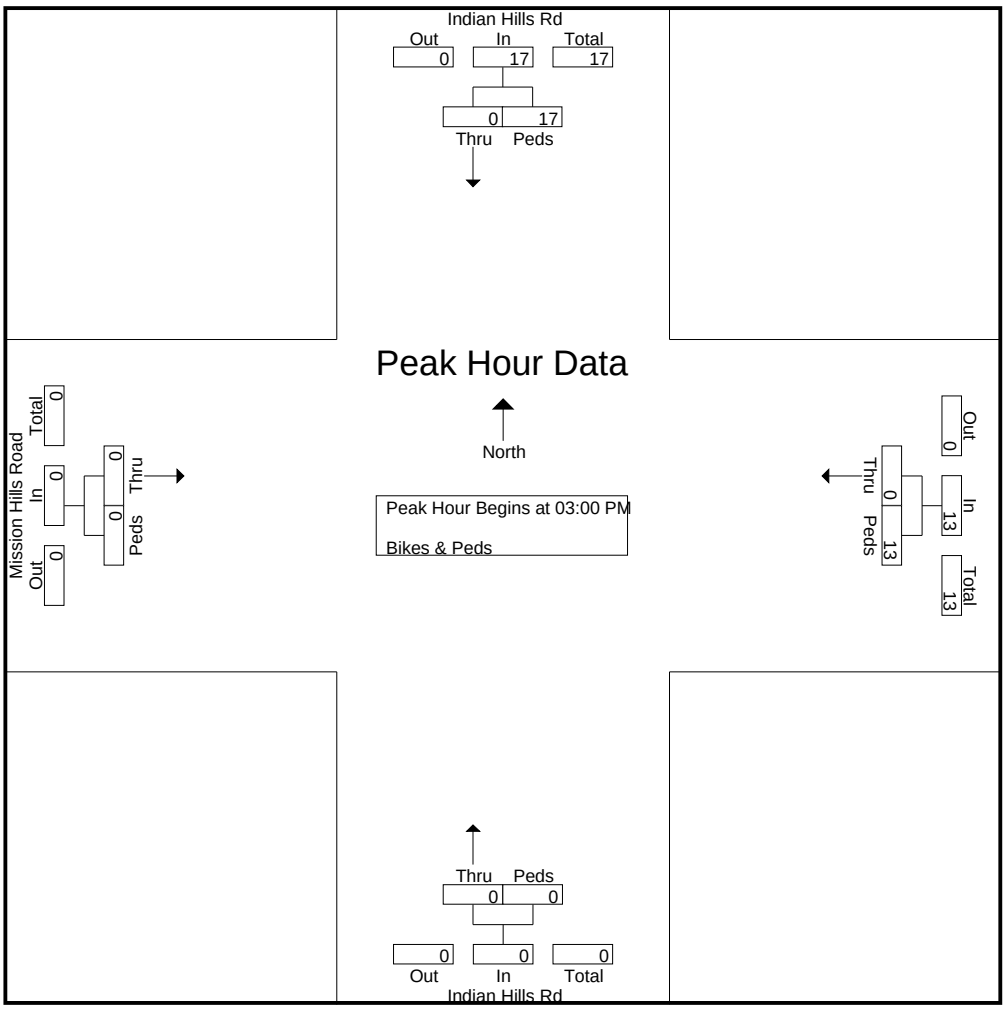


# CITY TRAFFIC COUNTERS

***WWW.CTCOUNTERS.COM***

File Name : IndianHills_MissionHills_BP
Site Code : 00000000
Start Date : 11/6/2019
Page No : 3

| | Indian Hills Rd Southbound | | | Westbound | | | Indian Hills Rd Northbound | | | Mission Hills Road Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Bikes | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:00 PM | | | | | | | | | | | | | |
| 03:00 PM | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 03:15 PM | 0 | 2 | 2 | 0 | **4** | **4** | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:30 PM | 0 | **8** | **8** | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | **11** |
| 03:45 PM | 0 | 7 | 7 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total Volume | 0 | 17 | 17 | 0 | 13 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| % App. Total | 0 | 100 | | 0 | 100 | | 0 | 0 | | 0 | 0 | | |
| PHF | .000 | .531 | .531 | .000 | .813 | .813 | .000 | .000 | .000 | .000 | .000 | .000 | .682 |



# *Appendix C*

HCM Analysis

**Intersection Level Of Service Report**
**Intersection 1: Rinaldi & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 8.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.489 |

**Intersection Setup**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 12 | 25 | 87 | 3 | 161 | 150 | 907 | 29 | 9 | 1230 | 244 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 35 | 12 | 25 | 87 | 3 | 161 | 150 | 907 | 29 | 9 | 1230 | 244 |
| Peak Hour Factor | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 3 | 7 | 23 | 1 | 43 | 40 | 241 | 8 | 2 | 327 | 65 |
| Total Analysis Volume [veh/h] | 37 | 13 | 27 | 93 | 3 | 171 | 160 | 965 | 31 | 10 | 1309 | 260 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 11 | | | 4 | | | 19 | | | 18 | | |
| v_di, Inbound Pedestrian Volume crossing m | 19 | | | 18 | | | 11 | | | 4 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 5 | 0 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 1.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Split [s] | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 19 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | Yes | | | Yes | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | No | | | No | | | Yes | | | Yes | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | Yes | | | Yes | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering 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 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 13 | 13 | 13 | 68 | 68 | 68 | 68 | 68 | 68 |
| g / C, Green / Cycle | 0.15 | 0.15 | 0.15 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.08 | 0.11 | 0.38 | 0.27 | 0.02 | 0.02 | 0.37 | 0.17 |
| s, saturation flow rate [veh/h] | 1002 | 1220 | 1589 | 419 | 3560 | 1558 | 580 | 3560 | 1567 |
| c, Capacity [veh/h] | 126 | 261 | 238 | 327 | 2711 | 1186 | 451 | 2711 | 1193 |
| d1, Uniform Delay [s] | 36.15 | 35.45 | 36.40 | 12.31 | 3.51 | 2.61 | 5.93 | 4.05 | 3.06 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 4.67 | 0.86 | 4.06 | 5.16 | 0.37 | 0.04 | 0.09 | 0.62 | 0.42 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.61 | 0.37 | 0.72 | 0.49 | 0.36 | 0.03 | 0.02 | 0.48 | 0.22 |
| d, Delay for Lane Group [s/veh] | 40.81 | 36.31 | 40.46 | 17.48 | 3.88 | 2.65 | 6.02 | 4.66 | 3.48 |
| Lane Group LOS | D | D | D | B | A | A | A | A | A |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.64 | 1.99 | 3.78 | 2.38 | 2.18 | 0.11 | 0.07 | 3.42 | 1.10 |
| 50th-Percentile Queue Length [ft/ln] | 41.08 | 49.65 | 94.62 | 59.57 | 54.39 | 2.77 | 1.84 | 85.48 | 27.40 |
| 95th-Percentile Queue Length [veh/ln] | 2.96 | 3.57 | 6.81 | 4.29 | 3.92 | 0.20 | 0.13 | 6.15 | 1.97 |
| 95th-Percentile Queue Length [ft/ln] | 73.95 | 89.37 | 170.32 | 107.22 | 97.91 | 4.98 | 3.31 | 153.87 | 49.33 |

**Movement, Approach, & Intersection Results**

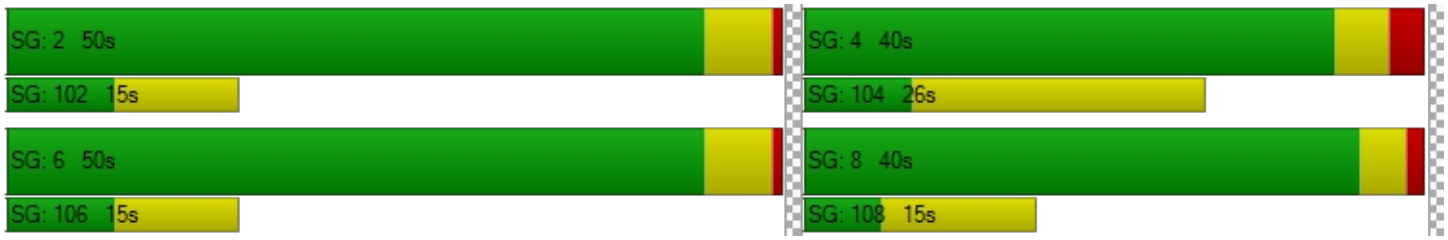
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 40.81 | 40.81 | 40.81 | 36.31 | 36.31 | 40.46 | 17.48 | 3.88 | 2.65 | 6.02 | 4.66 | 3.48 |
| Movement LOS | D | D | D | D | D | D | B | A | A | A | A | A |
| d_A, Approach Delay [s/veh] | 40.81 | | | 38.97 | | | 5.73 | | | 4.48 | | |
| Approach LOS | D | | | D | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 8.85 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.489 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 26.0 | 26.0 | 11.0 | 9.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 22.76 | 22.76 | 34.67 | 36.45 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.771 | 2.378 | 3.071 | 3.020 |
| Crosswalk LOS | A | B | C | C |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 800 | 764 | 1002 | 1002 |
| d_b, Bicycle Delay [s] | 16.20 | 17.17 | 11.20 | 11.20 |
| l_b,int, Bicycle LOS Score for Intersection | 1.687 | 2.000 | 2.513 | 2.862 |
| Bicycle LOS | A | B | B | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Rinaldi & Memory Park**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 17.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.013 |

**Intersection Setup**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 0 | 0 | 4 | 54 | 1240 | 0 | 0 | 1574 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 4 | 54 | 1240 | 0 | 0 | 1574 | 8 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 1.0000 | 1.0000 | 0.9170 | 0.9170 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 1 | 15 | 338 | 0 | 0 | 429 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 4 | 59 | 1352 | 0 | 0 | 1716 | 9 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | |
|---|---|---|---|---|
| Priority Scheme | Stop | Stop | Free | Free |
| Flared Lane | | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.16 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 308.17 | 436.08 | 17.24 | 16.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | | F | F | C | C | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.04 | 0.04 | 0.04 | 0.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 1.02 | 1.02 | 1.02 | 14.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | | 17.24 | | | 0.70 | | | 0.00 | | |
| Approach LOS | A | | | C | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 0.34 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Mission Hills & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.003 |

**Intersection Setup**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | Yes | | Yes | |

**Volumes**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 65 | 20 | 18 | 4 | 2 | 88 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 65 | 20 | 18 | 4 | 2 | 88 |
| Peak Hour Factor | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 18 | 5 | 5 | 1 | 1 | 24 |
| Total Analysis Volume [veh/h] | 71 | 22 | 20 | 4 | 2 | 96 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 |
| d_M, Delay for Movement [s/veh] | 7.37 | 0.00 | 0.00 | 0.00 | 10.05 | 8.77 |
| Movement LOS | A | A | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 0.14 | 0.14 | 0.00 | 0.00 | 0.31 | 0.31 |
| 95th-Percentile Queue Length [ft/ln] | 3.50 | 3.50 | 0.00 | 0.00 | 7.72 | 7.72 |
| d_A, Approach Delay [s/veh] | 5.63 | | 0.00 | | 8.79 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 6.44 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Rinaldi & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 9.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.489 |

**Intersection Setup**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 12 | 25 | 87 | 3 | 161 | 150 | 907 | 29 | 9 | 1230 | 244 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 35 | 12 | 25 | 97 | 3 | 161 | 150 | 907 | 29 | 9 | 1230 | 257 |
| Peak Hour Factor | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 3 | 7 | 26 | 1 | 43 | 40 | 241 | 8 | 2 | 327 | 68 |
| Total Analysis Volume [veh/h] | 37 | 13 | 27 | 103 | 3 | 171 | 160 | 965 | 31 | 10 | 1309 | 273 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 11 | | | 4 | | | 19 | | | 18 | | |
| v_di, Inbound Pedestrian Volume crossing m | 19 | | | 18 | | | 11 | | | 4 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 5 | 0 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 1.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Split [s] | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 19 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | Yes | | | Yes | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | No | | | No | | | Yes | | | Yes | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | Yes | | | Yes | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering 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 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 14 | 14 | 14 | 68 | 68 | 68 | 68 | 68 | 68 |
| g / C, Green / Cycle | 0.15 | 0.15 | 0.15 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.09 | 0.11 | 0.38 | 0.27 | 0.02 | 0.02 | 0.37 | 0.17 |
| s, saturation flow rate [veh/h] | 906 | 1186 | 1589 | 419 | 3560 | 1558 | 580 | 3560 | 1567 |
| c, Capacity [veh/h] | 114 | 257 | 238 | 327 | 2710 | 1186 | 451 | 2710 | 1192 |
| d1, Uniform Delay [s] | 36.46 | 35.87 | 36.37 | 12.34 | 3.52 | 2.62 | 5.95 | 4.06 | 3.10 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 6.69 | 1.06 | 4.02 | 5.17 | 0.37 | 0.04 | 0.09 | 0.62 | 0.45 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.67 | 0.41 | 0.72 | 0.49 | 0.36 | 0.03 | 0.02 | 0.48 | 0.23 |
| d, Delay for Lane Group [s/veh] | 43.15 | 36.93 | 40.39 | 17.51 | 3.89 | 2.66 | 6.04 | 4.68 | 3.55 |
| Lane Group LOS | D | D | D | B | A | A | A | A | A |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.69 | 2.23 | 3.78 | 2.39 | 2.18 | 0.11 | 0.07 | 3.43 | 1.17 |
| 50th-Percentile Queue Length [ft/ln] | 42.28 | 55.63 | 94.52 | 59.67 | 54.57 | 2.78 | 1.84 | 85.76 | 29.16 |
| 95th-Percentile Queue Length [veh/ln] | 3.04 | 4.01 | 6.81 | 4.30 | 3.93 | 0.20 | 0.13 | 6.17 | 2.10 |
| 95th-Percentile Queue Length [ft/ln] | 76.10 | 100.13 | 170.13 | 107.41 | 98.23 | 5.00 | 3.32 | 154.37 | 52.49 |

**Movement, Approach, & Intersection Results**

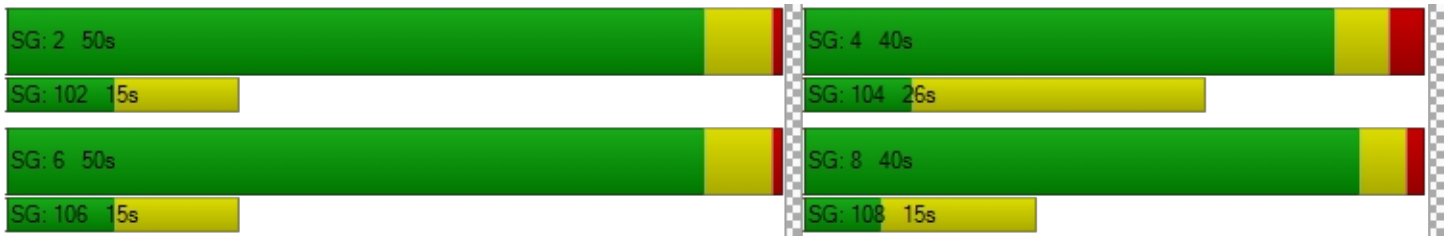
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 43.15 | 43.15 | 43.15 | 36.93 | 36.93 | 40.39 | 17.51 | 3.89 | 2.66 | 6.04 | 4.68 | 3.55 |
| Movement LOS | D | D | D | D | D | D | B | A | A | A | A | A |
| d_A, Approach Delay [s/veh] | 43.15 | | | 39.07 | | | 5.74 | | | 4.49 | | |
| Approach LOS | D | | | D | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 9.00 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.489 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 26.0 | 26.0 | 11.0 | 9.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 22.76 | 22.76 | 34.67 | 36.45 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.771 | 2.385 | 3.071 | 3.038 |
| Crosswalk LOS | A | B | C | C |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 800 | 764 | 1002 | 1002 |
| d_b, Bicycle Delay [s] | 16.20 | 17.17 | 11.20 | 11.20 |
| l_b,int, Bicycle LOS Score for Intersection | 1.687 | 2.017 | 2.513 | 2.873 |
| Bicycle LOS | A | B | B | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Rinaldi & Memory Park**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 17.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.064 |

**Intersection Setup**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 0 | 0 | 4 | 54 | 1240 | 0 | 0 | 1574 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 13 | 17 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 17 | 71 | 1240 | 0 | 0 | 1574 | 8 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 1.0000 | 1.0000 | 0.9170 | 0.9170 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 5 | 19 | 338 | 0 | 0 | 429 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 19 | 77 | 1352 | 0 | 0 | 1716 | 9 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | | Stop | | | Free | | | Free | | |
| Flared Lane | | | | No | | | | | | | | |
| Storage Area [veh] | 0 | | | 0 | | | 0 | | | 0 | | |
| Two-Stage Gap Acceptance | | | | No | | | | | | | | |
| Number of Storage Spaces in Median | 0 | | | 0 | | | 0 | | | 0 | | |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 | 0.21 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 349.39 | 490.01 | 17.90 | 17.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | | F | F | C | C | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.20 | 0.20 | 0.20 | 0.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 5.08 | 5.08 | 5.08 | 19.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | | 17.90 | | | 0.95 | | | 0.00 | | |
| Approach LOS | A | | | C | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 0.53 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Mission Hills & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.003 |

**Intersection Setup**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | Yes | | Yes | |

**Volumes**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 65 | 20 | 18 | 4 | 2 | 88 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 13 | 0 | 0 | 0 | 0 | 10 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 78 | 20 | 18 | 4 | 2 | 98 |
| Peak Hour Factor | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 21 | 5 | 5 | 1 | 1 | 27 |
| Total Analysis Volume [veh/h] | 85 | 22 | 20 | 4 | 2 | 107 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 7.39 | 0.00 | 0.00 | 0.00 | 10.31 | 8.81 |
| Movement LOS | A | A | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 0.17 | 0.17 | 0.00 | 0.00 | 0.35 | 0.35 |
| 95th-Percentile Queue Length [ft/ln] | 4.23 | 4.23 | 0.00 | 0.00 | 8.69 | 8.69 |
| d_A, Approach Delay [s/veh] | 5.87 | | 0.00 | | 8.84 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 6.63 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Rinaldi & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 9.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.572 |

**Intersection Setup**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 12 | 25 | 87 | 3 | 161 | 150 | 907 | 29 | 9 | 1230 | 244 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 38 | 13 | 27 | 94 | 3 | 174 | 162 | 986 | 31 | 10 | 1334 | 264 |
| Peak Hour Factor | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 3 | 7 | 25 | 1 | 46 | 43 | 262 | 8 | 3 | 355 | 70 |
| Total Analysis Volume [veh/h] | 40 | 14 | 29 | 100 | 3 | 185 | 172 | 1049 | 33 | 11 | 1419 | 281 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 11 | | | 4 | | | 19 | | | 18 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 19 | | | 18 | | | 11 | | | 4 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 5 | 0 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 1.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Split [s] | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 19 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | Yes | | | Yes | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | No | | | No | | | Yes | | | Yes | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | Yes | | | Yes | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering 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 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 14 | 14 | 14 | 68 | 68 | 68 | 68 | 68 | 68 |
| g / C, Green / Cycle | 0.16 | 0.16 | 0.16 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.09 | 0.12 | 0.46 | 0.29 | 0.02 | 0.02 | 0.40 | 0.18 |
| s, saturation flow rate [veh/h] | 958 | 1187 | 1589 | 378 | 3560 | 1558 | 536 | 3560 | 1566 |
| c, Capacity [veh/h] | 125 | 267 | 252 | 289 | 2679 | 1172 | 411 | 2679 | 1178 |
| d1, Uniform Delay [s] | 36.05 | 35.06 | 36.00 | 16.39 | 3.90 | 2.81 | 6.75 | 4.58 | 3.35 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 5.85 | 0.91 | 4.12 | 8.69 | 0.43 | 0.04 | 0.12 | 0.75 | 0.48 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.66 | 0.39 | 0.73 | 0.59 | 0.39 | 0.03 | 0.03 | 0.53 | 0.24 |
| d, Delay for Lane Group [s/veh] | 41.90 | 35.97 | 40.11 | 25.08 | 4.34 | 2.86 | 6.87 | 5.33 | 3.82 |
| Lane Group LOS | D | D | D | C | A | A | A | A | A |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.78 | 2.13 | 4.08 | 3.30 | 2.62 | 0.13 | 0.09 | 4.18 | 1.28 |
| 50th-Percentile Queue Length [ft/ln] | 44.61 | 53.17 | 102.09 | 82.61 | 65.45 | 3.15 | 2.22 | 104.48 | 32.11 |
| 95th-Percentile Queue Length [veh/ln] | 3.21 | 3.83 | 7.35 | 5.95 | 4.71 | 0.23 | 0.16 | 7.52 | 2.31 |
| 95th-Percentile Queue Length [ft/ln] | 80.30 | 95.71 | 183.76 | 148.69 | 117.81 | 5.66 | 4.00 | 188.06 | 57.80 |

**Movement, Approach, & Intersection Results**

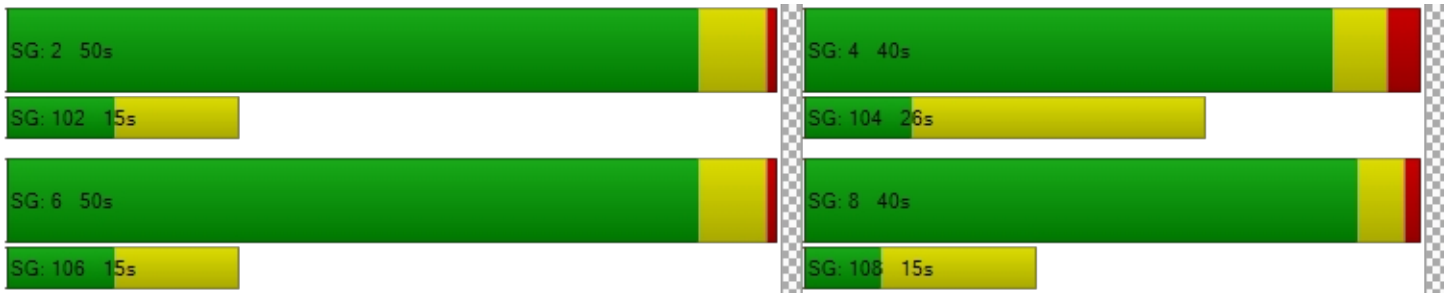
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 41.90 | 41.90 | 41.90 | 35.97 | 35.97 | 40.11 | 25.08 | 4.34 | 2.86 | 6.87 | 5.33 | 3.82 |
| Movement LOS | D | D | D | D | D | D | C | A | A | A | A | A |
| d_A, Approach Delay [s/veh] | 41.90 | | | 38.63 | | | 7.14 | | | 5.09 | | |
| Approach LOS | D | | | D | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 9.68 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.572 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 26.0 | 26.0 | 11.0 | 9.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 22.76 | 22.76 | 34.67 | 36.45 |
| I_p,int, Pedestrian LOS Score for Intersection | 1.776 | 2.413 | 3.110 | 3.066 |
| Crosswalk LOS | A | B | C | C |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 800 | 764 | 1002 | 1002 |
| d_b, Bicycle Delay [s] | 16.20 | 17.17 | 11.20 | 11.20 |
| I_b,int, Bicycle LOS Score for Intersection | 1.697 | 2.035 | 2.594 | 2.971 |
| Bicycle LOS | A | B | B | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Rinaldi & Memory Park**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 19.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.198 |

**Intersection Setup**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 0 | 0 | 4 | 54 | 1240 | 0 | 0 | 1574 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 4 | 58 | 1345 | 0 | 0 | 1706 | 9 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 1.0000 | 1.0000 | 0.9170 | 0.9170 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 1 | 16 | 367 | 0 | 0 | 465 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 4 | 63 | 1467 | 0 | 0 | 1860 | 10 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | |
|---|---|---|---|---|
| Priority Scheme | Stop | Stop | Free | Free |
| Flared Lane | | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.20 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 466.36 | 685.14 | 18.70 | 19.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | | F | F | C | C | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.05 | 0.05 | 0.05 | 0.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 1.14 | 1.14 | 1.14 | 18.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | | 18.70 | | | 0.79 | | | 0.00 | | |
| Approach LOS | A | | | C | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 0.38 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Mission Hills & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.003 |

**Intersection Setup**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | Yes | | Yes | |

**Volumes**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 65 | 20 | 18 | 4 | 2 | 88 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 70 | 22 | 19 | 4 | 2 | 95 |
| Peak Hour Factor | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 19 | 6 | 5 | 1 | 1 | 26 |
| Total Analysis Volume [veh/h] | 76 | 24 | 21 | 4 | 2 | 104 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 |
| d_M, Delay for Movement [s/veh] | 7.38 | 0.00 | 0.00 | 0.00 | 10.18 | 8.80 |
| Movement LOS | A | A | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 0.15 | 0.15 | 0.00 | 0.00 | 0.34 | 0.34 |
| 95th-Percentile Queue Length [ft/ln] | 3.76 | 3.76 | 0.00 | 0.00 | 8.43 | 8.43 |
| d_A, Approach Delay [s/veh] | 5.61 | | 0.00 | | 8.83 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 6.48 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Rinaldi & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 9.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.572 |

**Intersection Setup**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 12 | 25 | 87 | 3 | 161 | 150 | 907 | 29 | 9 | 1230 | 244 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 38 | 13 | 27 | 104 | 3 | 174 | 162 | 986 | 31 | 10 | 1334 | 277 |
| Peak Hour Factor | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 3 | 7 | 28 | 1 | 46 | 43 | 262 | 8 | 3 | 355 | 74 |
| Total Analysis Volume [veh/h] | 40 | 14 | 29 | 111 | 3 | 185 | 172 | 1049 | 33 | 11 | 1419 | 295 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 11 | | | 4 | | | 19 | | | 18 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 19 | | | 18 | | | 11 | | | 4 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 5 | 0 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 1.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Split [s] | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 5 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 10 | 0 | 0 | 19 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | Yes | | | Yes | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | No | | | No | | | Yes | | | Yes | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | Yes | | | Yes | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering 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 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 14 | 14 | 14 | 68 | 68 | 68 | 68 | 68 | 68 |
| g / C, Green / Cycle | 0.16 | 0.16 | 0.16 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| (v / s)_i Volume / Saturation Flow Rate | 0.10 | 0.10 | 0.12 | 0.46 | 0.29 | 0.02 | 0.02 | 0.40 | 0.19 |
| s, saturation flow rate [veh/h] | 853 | 1151 | 1589 | 378 | 3560 | 1558 | 536 | 3560 | 1566 |
| c, Capacity [veh/h] | 112 | 262 | 253 | 289 | 2677 | 1171 | 410 | 2677 | 1178 |
| d1, Uniform Delay [s] | 36.42 | 35.53 | 35.96 | 16.43 | 3.92 | 2.82 | 6.76 | 4.59 | 3.39 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 9.08 | 1.14 | 4.07 | 8.71 | 0.43 | 0.04 | 0.12 | 0.76 | 0.51 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.74 | 0.44 | 0.73 | 0.59 | 0.39 | 0.03 | 0.03 | 0.53 | 0.25 |
| d, Delay for Lane Group [s/veh] | 45.49 | 36.67 | 40.03 | 25.14 | 4.35 | 2.87 | 6.88 | 5.35 | 3.90 |
| Lane Group LOS | D | D | D | C | A | A | A | A | A |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.86 | 2.39 | 4.08 | 3.31 | 2.63 | 0.13 | 0.09 | 4.19 | 1.37 |
| 50th-Percentile Queue Length [ft/ln] | 46.58 | 59.83 | 101.97 | 82.76 | 65.68 | 3.16 | 2.23 | 104.84 | 34.21 |
| 95th-Percentile Queue Length [veh/ln] | 3.35 | 4.31 | 7.34 | 5.96 | 4.73 | 0.23 | 0.16 | 7.55 | 2.46 |
| 95th-Percentile Queue Length [ft/ln] | 83.84 | 107.70 | 183.54 | 148.96 | 118.22 | 5.68 | 4.01 | 188.71 | 61.57 |

**Movement, Approach, & Intersection Results**

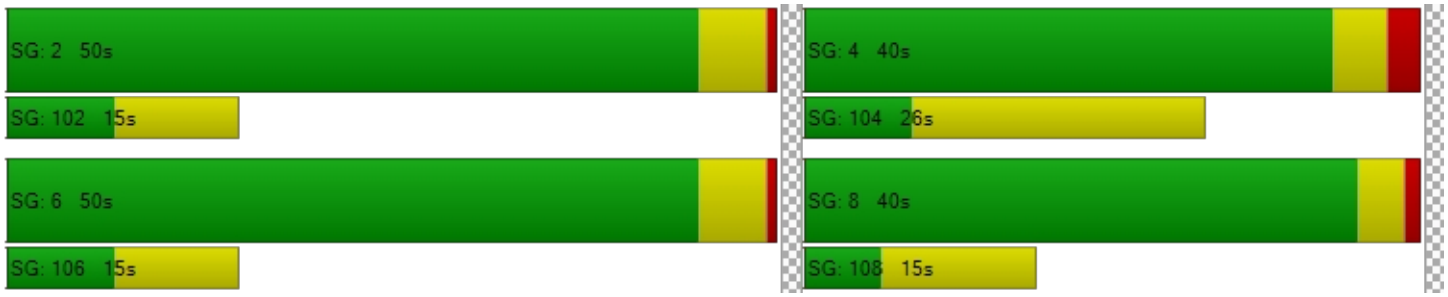
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 45.49 | 45.49 | 45.49 | 36.67 | 36.67 | 40.03 | 25.14 | 4.35 | 2.87 | 6.88 | 5.35 | 3.90 |
| Movement LOS | D | D | D | D | D | D | C | A | A | A | A | A |
| d_A, Approach Delay [s/veh] | 45.49 | | | 38.75 | | | 7.16 | | | 5.11 | | |
| Approach LOS | D | | | D | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 9.87 | | | | | | | | | | | |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.572 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 26.0 | 26.0 | 11.0 | 9.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 22.76 | 22.76 | 34.67 | 36.45 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.776 | 2.421 | 3.110 | 3.086 |
| Crosswalk LOS | A | B | C | C |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 800 | 764 | 1002 | 1002 |
| d_b, Bicycle Delay [s] | 16.20 | 17.17 | 11.20 | 11.20 |
| l_b,int, Bicycle LOS Score for Intersection | 1.697 | 2.053 | 2.594 | 2.983 |
| Bicycle LOS | A | B | B | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Rinaldi & Memory Park**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 20.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.258 |

**Intersection Setup**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 0 | 0 | 4 | 54 | 1240 | 0 | 0 | 1574 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 13 | 17 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 17 | 75 | 1345 | 0 | 0 | 1706 | 9 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 1.0000 | 1.0000 | 0.9170 | 0.9170 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 5 | 20 | 367 | 0 | 0 | 465 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 19 | 82 | 1467 | 0 | 0 | 1860 | 10 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | |
|---|---|---|---|---|
| Priority Scheme | Stop | Stop | Free | Free |
| Flared Lane | | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.26 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 539.66 | 785.41 | 19.52 | 20.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | | F | F | C | C | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.23 | 0.23 | 0.23 | 1.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 5.71 | 5.71 | 5.71 | 25.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | | 19.52 | | | 1.07 | | | 0.00 | | |
| Approach LOS | A | | | C | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 0.59 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Mission Hills & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.003 |

**Intersection Setup**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | Yes | | Yes | |

**Volumes**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 65 | 20 | 18 | 4 | 2 | 88 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 13 | 0 | 0 | 0 | 0 | 10 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 83 | 22 | 19 | 4 | 2 | 105 |
| Peak Hour Factor | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 | 0.9170 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 23 | 6 | 5 | 1 | 1 | 29 |
| Total Analysis Volume [veh/h] | 91 | 24 | 21 | 4 | 2 | 115 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 |
| d_M, Delay for Movement [s/veh] | 7.40 | 0.00 | 0.00 | 0.00 | 10.47 | 8.85 |
| Movement LOS | A | A | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 0.18 | 0.18 | 0.00 | 0.00 | 0.38 | 0.38 |
| 95th-Percentile Queue Length [ft/ln] | 4.55 | 4.55 | 0.00 | 0.00 | 9.42 | 9.42 |
| d_A, Approach Delay [s/veh] | 5.86 | | 0.00 | | 8.88 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 6.66 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Rinaldi & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 19.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.793 |

**Intersection Setup**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 25 | 1 | 19 | 278 | 1 | 180 | 65 | 1781 | 11 | 26 | 799 | 57 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 25 | 1 | 19 | 278 | 1 | 180 | 65 | 1781 | 11 | 26 | 799 | 57 |
| Peak Hour Factor | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 6 | 0 | 5 | 72 | 0 | 47 | 17 | 460 | 3 | 7 | 207 | 15 |
| Total Analysis Volume [veh/h] | 26 | 1 | 20 | 287 | 1 | 186 | 67 | 1842 | 11 | 27 | 826 | 59 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 28 | | | 19 | | | 35 | | | 29 | | |
| v_di, Inbound Pedestrian Volume crossing m | 35 | | | 29 | | | 28 | | | 19 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 44 | 0 | 0 | 44 | 0 |
| Amber [s] | 0.0 | 3.6 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Split [s] | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | Yes | | | Yes | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | No | | | No | | | Yes | | | Yes | |
| Maximum Recall | | No | | | No | | | Yes | | | Yes | |
| Pedestrian Recall | | No | | | No | | | Yes | | | Yes | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering 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 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 28 | 28 | 28 | 54 | 54 | 54 | 54 | 54 | 54 |
| g / C, Green / Cycle | 0.32 | 0.32 | 0.32 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| (v / s)_i Volume / Saturation Flow Rate | 0.22 | 0.28 | 0.12 | 0.10 | 0.52 | 0.01 | 0.11 | 0.23 | 0.04 |
| s, saturation flow rate [veh/h] | 216 | 1044 | 1589 | 657 | 3560 | 1506 | 251 | 3560 | 1526 |
| c, Capacity [veh/h] | 130 | 408 | 499 | 384 | 2125 | 899 | 121 | 2125 | 911 |
| d1, Uniform Delay [s] | 26.18 | 29.29 | 23.97 | 14.49 | 15.15 | 7.36 | 35.46 | 9.52 | 7.59 |
| k, delay calibration | 0.14 | 0.25 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 2.15 | 5.12 | 0.46 | 0.99 | 5.08 | 0.02 | 4.26 | 0.54 | 0.14 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.36 | 0.71 | 0.37 | 0.17 | 0.87 | 0.01 | 0.22 | 0.39 | 0.06 |
| d, Delay for Lane Group [s/veh] | 28.32 | 34.41 | 24.43 | 15.48 | 20.23 | 7.39 | 39.72 | 10.06 | 7.73 |
| Lane Group LOS | C | C | C | B | C | A | D | B | A |
| Critical Lane Group | No | Yes | No | No | Yes | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.77 | 6.25 | 3.06 | 0.90 | 15.27 | 0.09 | 0.69 | 4.04 | 0.48 |
| 50th-Percentile Queue Length [ft/ln] | 19.13 | 156.37 | 76.57 | 22.38 | 381.72 | 2.15 | 17.26 | 100.98 | 11.92 |
| 95th-Percentile Queue Length [veh/ln] | 1.38 | 10.36 | 5.51 | 1.61 | 21.68 | 0.16 | 1.24 | 7.27 | 0.86 |
| 95th-Percentile Queue Length [ft/ln] | 34.44 | 258.91 | 137.83 | 40.28 | 541.93 | 3.88 | 31.06 | 181.76 | 21.46 |

**Movement, Approach, & Intersection Results**

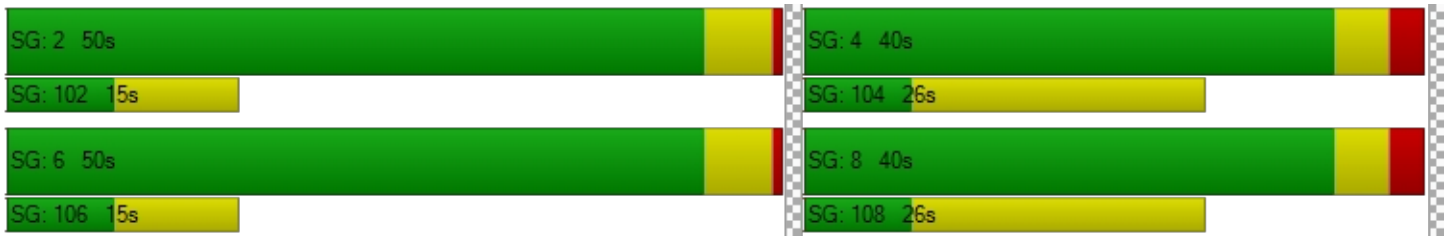
| d_M, Delay for Movement [s/veh] | 28.32 | 28.32 | 28.32 | 34.41 | 34.41 | 24.43 | 15.48 | 20.23 | 7.39 | 39.72 | 10.06 | 7.73 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement LOS | C | C | C | C | C | C | B | C | A | D | B | A |
| d_A, Approach Delay [s/veh] | 28.32 | | | 30.49 | | | 19.99 | | | 10.78 | | |
| Approach LOS | C | | | C | | | B | | | B | | |
| d_I, Intersection Delay [s/veh] | 19.09 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.793 | | | | | | | | | | | |

**Other Modes**

| g_Walk,mi, Effective Walk Time [s] | 26.0 | 26.0 | 11.0 | 11.0 |
|---|---|---|---|---|
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 430.39 | 516.43 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 22.76 | 22.76 | 34.67 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.778 | 2.213 | 3.042 | 3.358 |
| Crosswalk LOS | A | B | C | C |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 764 | 764 | 1002 | 1002 |
| d_b, Bicycle Delay [s] | 17.17 | 17.17 | 11.20 | 11.20 |
| l_b,int, Bicycle LOS Score for Intersection | 1.637 | 2.342 | 3.144 | 2.312 |
| Bicycle LOS | A | B | C | B |

## Sequence

| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Rinaldi & Memory Park**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 137.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.198 |

**Intersection Setup**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 6 | 0 | 10 | 25 | 1772 | 0 | 0 | 1037 | 16 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 6 | 0 | 10 | 25 | 1772 | 0 | 0 | 1037 | 16 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9600 | 0.9600 | 0.9600 | 0.9600 | 0.9600 | 1.0000 | 1.0000 | 0.9600 | 0.9600 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 2 | 0 | 3 | 7 | 461 | 0 | 0 | 270 | 4 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 6 | 0 | 10 | 26 | 1846 | 0 | 0 | 1080 | 17 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | | Stop | | | Free | | | Free | | |
| Flared Lane | | | | No | | | | | | | | |
| Storage Area [veh] | 0 | | | 0 | | | 0 | | | 0 | | |
| Two-Stage Gap Acceptance | | | | No | | | | | | | | |
| Number of Storage Spaces in Median | 0 | | | 0 | | | 0 | | | 0 | | |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.02 | 0.04 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 137.17 | 293.73 | 25.81 | 10.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | | F | F | D | B | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 0.76 | 0.76 | 0.76 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 19.00 | 19.00 | 19.00 | 3.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | | 67.57 | | | 0.15 | | | 0.00 | | |
| Approach LOS | A | | | F | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 0.46 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Mission Hills & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.001 |

**Intersection Setup**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | Yes | | Yes | |

**Volumes**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 43 | 7 | 17 | 2 | 1 | 160 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 43 | 7 | 17 | 2 | 1 | 160 |
| Peak Hour Factor | 0.7880 | 0.7880 | 0.7880 | 0.7880 | 0.7880 | 0.7880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 14 | 2 | 5 | 1 | 0 | 51 |
| Total Analysis Volume [veh/h] | 55 | 9 | 22 | 3 | 1 | 203 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.19 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 7.35 | 0.00 | 0.00 | 0.00 | 10.21 | 9.24 |
| Movement LOS | A | A | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 0.11 | 0.11 | 0.00 | 0.00 | 0.72 | 0.72 |
| 95th-Percentile Queue Length [ft/ln] | 2.69 | 2.69 | 0.00 | 0.00 | 17.93 | 17.93 |
| d_A, Approach Delay [s/veh] | 6.31 | | 0.00 | | 9.25 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 7.82 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Rinaldi & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 20.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.812 |

**Intersection Setup**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Indian Hills | | | Indian Hills | | | Rinaldi | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 25 | 1 | 19 | 278 | 1 | 180 | 65 | 1781 | 11 | 26 | 799 | 57 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 25 | 1 | 19 | 296 | 1 | 180 | 65 | 1781 | 11 | 26 | 799 | 70 |
| Peak Hour Factor | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 6 | 0 | 5 | 77 | 0 | 47 | 17 | 460 | 3 | 7 | 207 | 18 |
| Total Analysis Volume [veh/h] | 26 | 1 | 20 | 306 | 1 | 186 | 67 | 1842 | 11 | 27 | 826 | 72 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 28 | | | 19 | | | 35 | | | 29 | | |
| v_di, Inbound Pedestrian Volume crossing m | 35 | | | 29 | | | 28 | | | 19 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Maximum Green [s] | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 44 | 0 | 0 | 44 | 0 |
| Amber [s] | 0.0 | 3.6 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Split [s] | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | Yes | | | Yes | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | No | | | No | | | Yes | | | Yes | |
| Maximum Recall | | No | | | No | | | Yes | | | Yes | |
| Pedestrian Recall | | No | | | No | | | Yes | | | Yes | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering 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 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 30 | 30 | 30 | 52 | 52 | 52 | 52 | 52 | 52 |
| g / C, Green / Cycle | 0.33 | 0.33 | 0.33 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| (v / s)_i Volume / Saturation Flow Rate | 0.23 | 0.29 | 0.12 | 0.10 | 0.52 | 0.01 | 0.11 | 0.23 | 0.05 |
| s, saturation flow rate [veh/h] | 204 | 1042 | 1589 | 656 | 3560 | 1503 | 251 | 3560 | 1524 |
| c, Capacity [veh/h] | 130 | 425 | 527 | 368 | 2063 | 871 | 111 | 2063 | 883 |
| d1, Uniform Delay [s] | 25.14 | 28.55 | 22.77 | 15.78 | 16.48 | 8.01 | 38.72 | 10.36 | 8.33 |
| k, delay calibration | 0.16 | 0.29 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 2.55 | 6.01 | 0.40 | 1.09 | 6.41 | 0.03 | 5.13 | 0.58 | 0.18 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.36 | 0.72 | 0.35 | 0.18 | 0.89 | 0.01 | 0.24 | 0.40 | 0.08 |
| d, Delay for Lane Group [s/veh] | 27.69 | 34.56 | 23.17 | 16.87 | 22.89 | 8.04 | 43.85 | 10.94 | 8.51 |
| Lane Group LOS | C | C | C | B | C | A | D | B | A |
| Critical Lane Group | No | Yes | No | No | Yes | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.76 | 6.73 | 2.97 | 0.94 | 16.42 | 0.09 | 0.73 | 4.28 | 0.62 |
| 50th-Percentile Queue Length [ft/ln] | 18.97 | 168.28 | 74.19 | 23.60 | 410.57 | 2.28 | 18.36 | 106.93 | 15.52 |
| 95th-Percentile Queue Length [veh/ln] | 1.37 | 10.99 | 5.34 | 1.70 | 23.07 | 0.16 | 1.32 | 7.67 | 1.12 |
| 95th-Percentile Queue Length [ft/ln] | 34.15 | 274.65 | 133.54 | 42.48 | 576.72 | 4.10 | 33.04 | 191.72 | 27.94 |

**Movement, Approach, & Intersection Results**

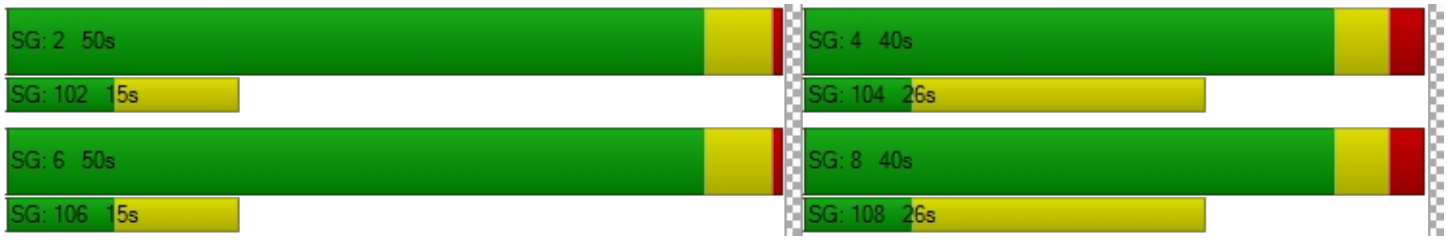
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 27.69 | 27.69 | 27.69 | 34.56 | 34.56 | 23.17 | 16.87 | 22.89 | 8.04 | 43.85 | 10.94 | 8.51 |
| Movement LOS | C | C | C | C | C | C | B | C | A | D | B | A |
| d_A, Approach Delay [s/veh] | 27.69 | | | 30.27 | | | 22.59 | | | 11.71 | | |
| Approach LOS | C | | | C | | | C | | | B | | |
| d_I, Intersection Delay [s/veh] | 20.81 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.812 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 26.0 | 26.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 430.39 | 509.08 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 22.76 | 22.76 | 34.67 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.778 | 2.224 | 3.042 | 3.390 |
| Crosswalk LOS | A | B | C | C |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 764 | 764 | 1002 | 1002 |
| d_b, Bicycle Delay [s] | 17.17 | 17.17 | 11.20 | 11.20 |
| l_b,int, Bicycle LOS Score for Intersection | 1.637 | 2.373 | 3.144 | 2.323 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Rinaldi & Memory Park**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 145.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.218 |

**Intersection Setup**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | | | | | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 6 | 0 | 10 | 25 | 1772 | 0 | 0 | 1037 | 16 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 23 | 17 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 6 | 0 | 33 | 42 | 1772 | 0 | 0 | 1037 | 16 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9600 | 0.9600 | 0.9600 | 0.9600 | 0.9600 | 1.0000 | 1.0000 | 0.9600 | 0.9600 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 2 | 0 | 9 | 11 | 461 | 0 | 0 | 270 | 4 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 6 | 0 | 34 | 44 | 1846 | 0 | 0 | 1080 | 17 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | | Stop | | | Free | | | Free | | |
| Flared Lane | | | | No | | | | | | | | |
| Storage Area [veh] | 0 | | | 0 | | | 0 | | | 0 | | |
| Two-Stage Gap Acceptance | | | | No | | | | | | | | |
| Number of Storage Spaces in Median | 0 | | | 0 | | | 0 | | | 0 | | |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.22 | 0.00 | 0.07 | 0.07 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 145.74 | 315.11 | 22.70 | 11.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | | F | F | C | B | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 1.12 | 1.12 | 1.12 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 27.88 | 27.88 | 27.88 | 5.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | | 41.15 | | | 0.26 | | | 0.00 | | |
| Approach LOS | A | | | E | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 0.71 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Mission Hills & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.001 |

**Intersection Setup**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | Yes | | Yes | |

**Volumes**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 43 | 7 | 17 | 2 | 1 | 160 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 13 | 0 | 0 | 0 | 0 | 18 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 56 | 7 | 17 | 2 | 1 | 178 |
| Peak Hour Factor | 0.7880 | 0.7880 | 0.7880 | 0.7880 | 0.7880 | 0.7880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 18 | 2 | 5 | 1 | 0 | 56 |
| Total Analysis Volume [veh/h] | 71 | 9 | 22 | 3 | 1 | 226 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.21 |
| d_M, Delay for Movement [s/veh] | 7.37 | 0.00 | 0.00 | 0.00 | 10.56 | 9.36 |
| Movement LOS | A | A | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 0.14 | 0.14 | 0.00 | 0.00 | 0.82 | 0.82 |
| 95th-Percentile Queue Length [ft/ln] | 3.50 | 3.50 | 0.00 | 0.00 | 20.49 | 20.49 |
| d_A, Approach Delay [s/veh] | 6.54 | | 0.00 | | 9.36 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 7.98 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Rinaldi & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 27.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.862 |

**Intersection Setup**

| Name | Indian Hills | | | Indian Hills | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Indian Hills | | | Indian Hills | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 25 | 1 | 19 | 278 | 1 | 180 | 65 | 1781 | 11 | 26 | 799 | 57 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 27 | 1 | 21 | 300 | 1 | 194 | 70 | 1931 | 12 | 28 | 871 | 62 |
| Peak Hour Factor | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 0 | 5 | 78 | 0 | 50 | 18 | 499 | 3 | 7 | 225 | 16 |
| Total Analysis Volume [veh/h] | 28 | 1 | 22 | 310 | 1 | 201 | 72 | 1997 | 12 | 29 | 901 | 64 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 28 | | | 19 | | | 35 | | | 29 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 35 | | | 29 | | | 28 | | | 19 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Maximum Green [s] | 0 | 34 | 0 | 0 | 34 | 0 | 0 | 44 | 0 | 0 | 44 | 0 |
| Amber [s] | 0.0 | 3.6 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Split [s] | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| l1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| l2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | No | | | No | | | Yes | | | Yes | |
| Maximum Recall | | No | | | No | | | Yes | | | Yes | |
| Pedestrian Recall | | No | | | No | | | Yes | | | Yes | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering 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 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 30 | 30 | 30 | 52 | 52 | 52 | 52 | 52 | 52 |
| g / C, Green / Cycle | 0.34 | 0.34 | 0.34 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| (v / s)_i Volume / Saturation Flow Rate | 0.25 | 0.30 | 0.13 | 0.12 | 0.56 | 0.01 | 0.13 | 0.25 | 0.04 |
| s, saturation flow rate [veh/h] | 204 | 1034 | 1589 | 618 | 3560 | 1502 | 216 | 3560 | 1523 |
| c, Capacity [veh/h] | 131 | 429 | 536 | 337 | 2042 | 862 | 85 | 2042 | 874 |
| d1, Uniform Delay [s] | 25.99 | 28.30 | 22.61 | 17.42 | 18.63 | 8.24 | 44.79 | 10.95 | 8.53 |
| k, delay calibration | 0.20 | 0.30 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 3.47 | 6.29 | 0.43 | 1.45 | 15.33 | 0.03 | 10.47 | 0.69 | 0.16 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.39 | 0.73 | 0.37 | 0.21 | 0.98 | 0.01 | 0.34 | 0.44 | 0.07 |
| d, Delay for Lane Group [s/veh] | 29.46 | 34.59 | 23.04 | 18.87 | 33.96 | 8.27 | 55.26 | 11.65 | 8.69 |
| Lane Group LOS | C | C | C | B | C | A | E | B | A |
| Critical Lane Group | No | Yes | No | No | Yes | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.84 | 6.84 | 3.21 | 1.09 | 22.07 | 0.10 | 0.89 | 4.90 | 0.56 |
| 50th-Percentile Queue Length [ft/ln] | 21.10 | 170.95 | 80.20 | 27.33 | 551.65 | 2.53 | 22.24 | 122.41 | 13.98 |
| 95th-Percentile Queue Length [veh/ln] | 1.52 | 11.13 | 5.77 | 1.97 | 29.77 | 0.18 | 1.60 | 8.53 | 1.01 |
| 95th-Percentile Queue Length [ft/ln] | 37.97 | 278.16 | 144.37 | 49.19 | 744.25 | 4.56 | 40.04 | 213.13 | 25.16 |

**Movement, Approach, & Intersection Results**

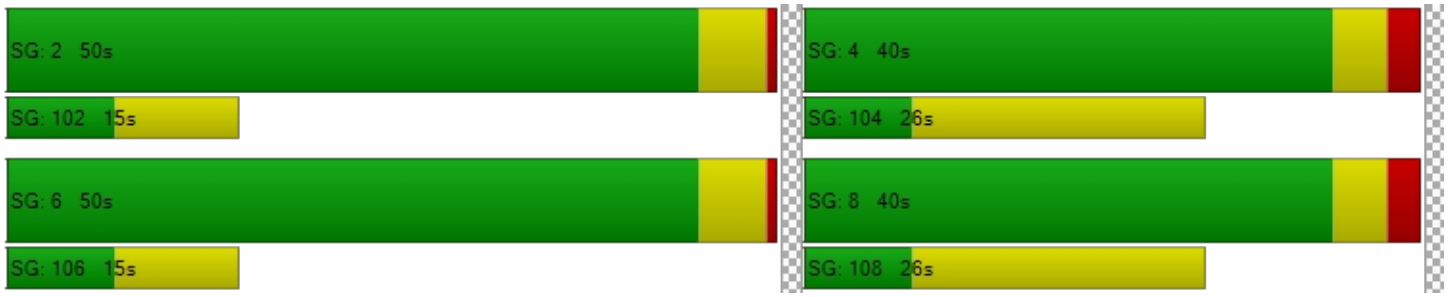
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 29.46 | 29.46 | 29.46 | 34.59 | 34.59 | 23.04 | 18.87 | 33.96 | 8.27 | 55.26 | 11.65 | 8.69 |
| Movement LOS | C | C | C | C | C | C | B | C | A | E | B | A |
| d_A, Approach Delay [s/veh] | 29.46 | | | 30.06 | | | 33.29 | | | 12.73 | | |
| Approach LOS | C | | | C | | | C | | | B | | |
| d_I, Intersection Delay [s/veh] | 27.17 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.862 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 170.97 | 171.44 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.801 | 2.253 | 3.080 | 3.433 |
| Crosswalk LOS | A | B | C | C |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 764 | 764 | 1002 | 1002 |
| d_b, Bicycle Delay [s] | 17.17 | 17.17 | 11.20 | 11.20 |
| l_b,int, Bicycle LOS Score for Intersection | 1.644 | 2.404 | 3.276 | 2.380 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Rinaldi & Memory Park**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 192.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.271 |

**Intersection Setup**

| Name | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 6 | 0 | 10 | 25 | 1772 | 0 | 0 | 1037 | 16 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 6 | 0 | 11 | 27 | 1922 | 0 | 0 | 1128 | 17 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 1.0000 | 1.0000 | 0.9620 | 0.9620 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 2 | 0 | 3 | 7 | 499 | 0 | 0 | 293 | 4 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 6 | 0 | 11 | 28 | 1998 | 0 | 0 | 1173 | 18 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | |
|---|---|---|---|---|
| Priority Scheme | Stop | Stop | Free | Free |
| Flared Lane | | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.27 | 0.00 | 0.02 | 0.05 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 192.11 | 436.02 | 37.47 | 11.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | | F | F | E | B | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 1.04 | 1.04 | 1.04 | 0.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 26.11 | 26.11 | 26.11 | 3.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | | 92.05 | | | 0.16 | | | 0.00 | | |
| Approach LOS | A | | | F | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 0.58 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Mission Hills & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.4 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.001 |

**Intersection Setup**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | Yes | | Yes | |

**Volumes**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 43 | 7 | 17 | 2 | 1 | 160 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 46 | 8 | 18 | 2 | 1 | 173 |
| Peak Hour Factor | 0.7880 | 0.7880 | 0.7880 | 0.7880 | 0.7880 | 0.7880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 3 | 6 | 1 | 0 | 55 |
| Total Analysis Volume [veh/h] | 58 | 10 | 23 | 3 | 1 | 220 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.21 |
| d_M, Delay for Movement [s/veh] | 7.35 | 0.00 | 0.00 | 0.00 | 10.35 | 9.33 |
| Movement LOS | A | A | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 0.11 | 0.11 | 0.00 | 0.00 | 0.79 | 0.79 |
| 95th-Percentile Queue Length [ft/ln] | 2.84 | 2.84 | 0.00 | 0.00 | 19.83 | 19.83 |
| d_A, Approach Delay [s/veh] | 6.27 | | 0.00 | | 9.34 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 7.91 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Rinaldi & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 31.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.880 |

**Intersection Setup**

| Name | Indian Hills | | | Indian Hills | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.21 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Indian Hills | | | Indian Hills | | | | | | Rinaldi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 25 | 1 | 19 | 278 | 1 | 180 | 65 | 1781 | 11 | 26 | 799 | 57 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 27 | 1 | 21 | 318 | 1 | 194 | 70 | 1931 | 12 | 28 | 871 | 75 |
| Peak Hour Factor | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 | 0.9670 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 0 | 5 | 82 | 0 | 50 | 18 | 499 | 3 | 7 | 225 | 19 |
| Total Analysis Volume [veh/h] | 28 | 1 | 22 | 329 | 1 | 201 | 72 | 1997 | 12 | 29 | 901 | 78 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major stree | 28 | | | 19 | | | 35 | | | 29 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ | 35 | | | 29 | | | 28 | | | 19 | | |
| v_co, Outbound Pedestrian Volume crossing minor stree | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 0.00 |

**Phasing & Timing**

| Control Type | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis | Permis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 8 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| Maximum Green [s] | 0 | 34 | 0 | 0 | 34 | 0 | 0 | 44 | 0 | 0 | 44 | 0 |
| Amber [s] | 0.0 | 3.6 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 | 4.4 | 0.0 |
| All red [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Split [s] | 0 | 40 | 0 | 0 | 40 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 19 | 0 | 0 | 19 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | No | | | No | | | Yes | | | Yes | |
| Maximum Recall | | No | | | No | | | Yes | | | Yes | |
| Pedestrian Recall | | No | | | No | | | Yes | | | Yes | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering 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 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | R | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 32 | 32 | 32 | 50 | 50 | 50 | 50 | 50 | 50 |
| g / C, Green / Cycle | 0.35 | 0.35 | 0.35 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 |
| (v / s)_i Volume / Saturation Flow Rate | 0.27 | 0.32 | 0.13 | 0.12 | 0.56 | 0.01 | 0.13 | 0.25 | 0.05 |
| s, saturation flow rate [veh/h] | 190 | 1033 | 1589 | 618 | 3560 | 1500 | 216 | 3560 | 1521 |
| c, Capacity [veh/h] | 129 | 446 | 563 | 322 | 1982 | 835 | 81 | 1982 | 847 |
| d1, Uniform Delay [s] | 25.09 | 27.62 | 21.48 | 18.83 | 19.94 | 8.91 | 44.99 | 11.83 | 9.30 |
| k, delay calibration | 0.24 | 0.34 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 4.22 | 7.25 | 0.38 | 1.60 | 22.02 | 0.03 | 11.80 | 0.75 | 0.22 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.39 | 0.74 | 0.36 | 0.22 | 1.01 | 0.01 | 0.36 | 0.45 | 0.09 |
| d, Delay for Lane Group [s/veh] | 29.31 | 34.87 | 21.86 | 20.43 | 41.96 | 8.94 | 56.78 | 12.59 | 9.51 |
| Lane Group LOS | C | C | C | C | F | A | E | B | A |
| Critical Lane Group | No | Yes | No | No | Yes | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.85 | 7.33 | 3.11 | 1.15 | 24.42 | 0.11 | 0.91 | 5.16 | 0.72 |
| 50th-Percentile Queue Length [ft/ln] | 21.19 | 183.32 | 77.69 | 28.70 | 610.44 | 2.66 | 22.69 | 128.95 | 18.10 |
| 95th-Percentile Queue Length [veh/ln] | 1.53 | 11.77 | 5.59 | 2.07 | 32.72 | 0.19 | 1.63 | 8.88 | 1.30 |
| 95th-Percentile Queue Length [ft/ln] | 38.14 | 294.35 | 139.84 | 51.66 | 818.01 | 4.79 | 40.85 | 222.07 | 32.58 |

**Movement, Approach, & Intersection Results**

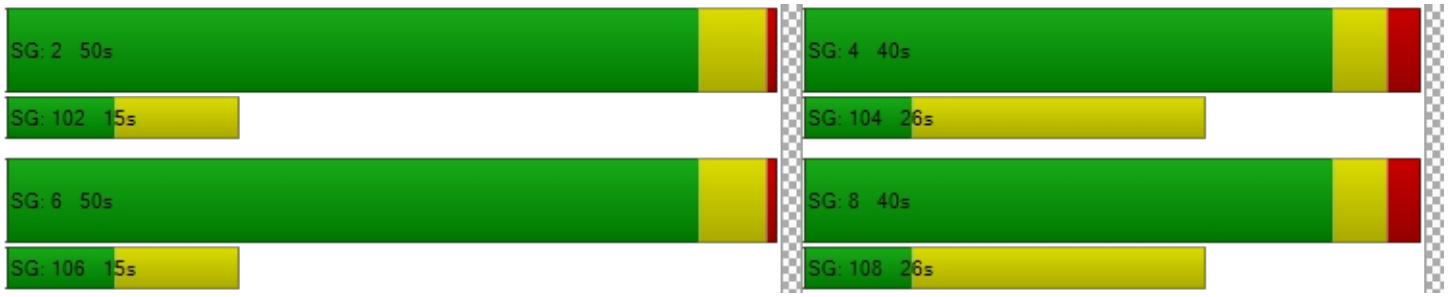
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 29.31 | 29.31 | 29.31 | 34.87 | 34.87 | 21.86 | 20.43 | 41.96 | 8.94 | 56.78 | 12.59 | 9.51 |
| Movement LOS | C | C | C | C | C | C | C | F | A | E | B | A |
| d_A, Approach Delay [s/veh] | 29.31 | | | 29.94 | | | 41.03 | | | 13.62 | | |
| Approach LOS | C | | | C | | | D | | | B | | |
| d_I, Intersection Delay [s/veh] | 31.74 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.880 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 170.97 | 163.54 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.801 | 2.264 | 3.080 | 3.466 |
| Crosswalk LOS | A | B | C | C |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 764 | 764 | 1002 | 1002 |
| d_b, Bicycle Delay [s] | 17.17 | 17.17 | 11.20 | 11.20 |
| l_b,int, Bicycle LOS Score for Intersection | 1.644 | 2.436 | 3.276 | 2.391 |
| Bicycle LOS | A | B | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: Rinaldi & Memory Park**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 203.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.299 |

**Intersection Setup**

| Name | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 6 | 0 | 10 | 25 | 1772 | 0 | 0 | 1037 | 16 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 23 | 17 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 6 | 0 | 34 | 44 | 1922 | 0 | 0 | 1128 | 17 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 1.0000 | 1.0000 | 0.9620 | 0.9620 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 2 | 0 | 9 | 11 | 499 | 0 | 0 | 293 | 4 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 6 | 0 | 35 | 46 | 1998 | 0 | 0 | 1173 | 18 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | |
|---|---|---|---|---|
| Priority Scheme | Stop | Stop | Free | Free |
| Flared Lane | | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.30 | 0.00 | 0.08 | 0.08 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 203.08 | 468.15 | 31.84 | 11.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | | F | F | D | B | A | | | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 1.54 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 0.00 | 38.43 | 38.43 | 38.43 | 6.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | | 56.90 | | | 0.26 | | | 0.00 | | |
| Approach LOS | A | | | F | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 0.88 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Mission Hills & Indian Hills**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.001 |

**Intersection Setup**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | Yes | | Yes | |

**Volumes**

| Name | Indian Hills | | Indian Hills | | Mission Hills | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 43 | 7 | 17 | 2 | 1 | 160 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 | 1.0800 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 13 | 0 | 0 | 0 | 0 | 18 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 59 | 8 | 18 | 2 | 1 | 191 |
| Peak Hour Factor | 0.7880 | 0.7880 | 0.7880 | 0.7880 | 0.7880 | 0.7880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 19 | 3 | 6 | 1 | 0 | 61 |
| Total Analysis Volume [veh/h] | 75 | 10 | 23 | 3 | 1 | 242 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 |
| d_M, Delay for Movement [s/veh] | 7.38 | 0.00 | 0.00 | 0.00 | 10.73 | 9.45 |
| Movement LOS | A | A | A | A | B | A |
| 95th-Percentile Queue Length [veh/ln] | 0.15 | 0.15 | 0.00 | 0.00 | 0.90 | 0.90 |
| 95th-Percentile Queue Length [ft/ln] | 3.71 | 3.71 | 0.00 | 0.00 | 22.38 | 22.38 |
| d_A, Approach Delay [s/veh] | 6.51 | | 0.00 | | 9.46 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 8.05 | | | | | |
| Intersection LOS | B | | | | | |

# *Appendix D*

Circular 212 Worksheet

# Level of Service Workheet
## (Circular 212 Method)

| I/S #: | North-South Street: | Indian Hills Road | Year of Count: | 2019 | Ambient Growth: (%): | 2 | Conducted by: | TA | Date: | 7/17/2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | East-West Street: | Rinaldi Street | Projection Year: | 2023 | Peak Hour: | AM | Reviewed by: | JB | Project: | Ararat Homes |

| | EXISTING CONDITION | | | EXISTING PLUS PROJECT | | | FUTURE CONDITION W/O PROJECT | | | | FUTURE CONDITION W/ PROJECT | | | | FUTURE W/ PROJECT W/ MITIGATION | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOVEMENT | Volume | No. of Lanes | Lane Volume | Project Traffic | Total Volume | Lane Volume | Added Volume | Total Volume | No. of Lanes | Lane Volume | Added Volume | Total Volume | No. of Lanes | Lane Volume | Added Volume | Total Volume | No. of Lanes | Lane Volume |
| **NORTHBOUND** | | | | | | | | | | | | | | | | | | |
| Left | 35 | 0 | 35 | 0 | 35 | 35 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 |
| Left-Through | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Through | 12 | 0 | **72** | 0 | 12 | **72** | 0 | 13 | 0 | **78** | 0 | 13 | 0 | **78** | 0 | 13 | 0 | **78** |
| Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Right | 25 | 0 | 0 | 0 | 25 | 0 | 0 | 27 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 27 | 0 | 0 |
| Left-Through-Right | | 1 | | | | | | | 1 | | | | 1 | | | | 1 | |
| Left-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| **SOUTHBOUND** | | | | | | | | | | | | | | | | | | |
| Left | 87 | 0 | **87** | 10 | 97 | **97** | 0 | 94 | 0 | **94** | 10 | 104 | 0 | **104** | 0 | 104 | 0 | **104** |
| Left-Through | | 1 | | | | | | | 1 | | | | 1 | | | | 1 | |
| Through | 3 | 0 | 90 | 0 | 3 | 100 | 0 | 3 | 0 | 97 | 0 | 3 | 0 | 107 | 0 | 3 | 0 | 107 |
| Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Right | 161 | 1 | 86 | 0 | 161 | 86 | 0 | 174 | 1 | 93 | 0 | 174 | 1 | 93 | 0 | 174 | 1 | 93 |
| Left-Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Left-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| **EASTBOUND** | | | | | | | | | | | | | | | | | | |
| Left | 150 | 1 | **150** | 0 | 150 | **150** | 0 | 162 | 1 | **162** | 0 | 162 | 1 | **162** | 0 | 162 | 1 | **162** |
| Left-Through | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Through | 907 | 2 | 454 | 0 | 907 | 454 | 6 | 988 | 2 | 494 | 0 | 988 | 2 | 494 | 0 | 988 | 2 | 494 |
| Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Right | 29 | 1 | 29 | 0 | 29 | 29 | 0 | 31 | 1 | 31 | 0 | 31 | 1 | 31 | 0 | 31 | 1 | 31 |
| Left-Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Left-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| **WESTBOUND** | | | | | | | | | | | | | | | | | | |
| Left | 9 | 1 | 9 | 0 | 9 | 9 | 0 | 10 | 1 | 10 | 0 | 10 | 1 | 10 | 0 | 10 | 1 | 10 |
| Left-Through | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Through | 1230 | 2 | **615** | 0 | 1230 | **615** | 6 | 1337 | 2 | **669** | 0 | 1337 | 2 | **669** | 0 | 1337 | 2 | **669** |
| Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Right | 244 | 1 | 244 | 13 | 257 | 257 | 0 | 264 | 1 | 264 | 13 | 277 | 1 | 277 | 0 | 277 | 1 | 277 |
| Left-Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| Left-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| CRITICAL VOLUMES | North-South: | | 159 | North-South: | | 169 | North-South: | | | 172 | North-South: | | | 182 | North-South: | | | 182 |
| | East-West: | | 765 | East-West: | | 765 | East-West: | | | 831 | East-West: | | | 831 | East-West: | | | 831 |
| | SUM: | | 924 | SUM: | | 934 | SUM: | | | 1003 | SUM: | | | 1013 | SUM: | | | 1013 |
| VOLUME/CAPACITY (V/C) RATIO: | | | 0.616 | | | 0.623 | | | | 0.669 | | | | 0.675 | | | | 0.675 |
| V/C LESS ATSAC/ATCS ADJUSTMENT: | | | 0.516 | | | 0.523 | | | | 0.569 | | | | 0.575 | | | | 0.575 |
| LEVEL OF SERVICE (LOS): | | | A | | | A | | | | A | | | | A | | | | A |

| | NB-- | SB-- | EB-- | WB-- | NB-- | SB-- | EB-- | WB-- | NB-- | SB-- | EB-- | WB-- | NB-- | SB-- | EB-- | WB-- | NB-- | SB-- | EB-- | WB-- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of Phases | | | | 2 | | | | 2 | | | | 2 | | | | 2 | | | | 2 |
| Opposed Ø'ing: N/S-1, E/W-2 or Both-3? | | | | 0 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| Right Turns: FREE-1, NRTOR-2 or OLA-3? | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATSAC-1 or ATSAC+ATCS-2? | | | | 2 | | | | 2 | | | | 2 | | | | 2 | | | | 2 |
| Override Capacity | | | | 0 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |

*REMARKS:*

Version: 1i Beta; 8/4/2011

**PROJECT IMPACT**

| | | | |
|---|---|---|---|
| Change in *v/c* due to project: | 0.006 | Δ*v/c* after mitigation: | 0.006 |
| Significant impacted? | NO | Fully mitigated? | N/A |

# Level of Service Workheet
## (Circular 212 Method)

| I/S #: | North-South Street: | Indian Hills Road | Year of Count: | 2019 | Ambient Growth: (%): | 2 | Conducted by: | TA | Date: | 7/17/2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | East-West Street: | Rinaldi Street | Projection Year: | 2023 | Peak Hour: | PM | Reviewed by: | JB | Project: | Ararat Homes |

| | EXISTING CONDITION | | | EXISTING PLUS PROJECT | | | FUTURE CONDITION W/O PROJECT | | | | FUTURE CONDITION W/ PROJECT | | | | FUTURE W/ PROJECT W/ MITIGATION | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | |
| No. of Phases | | | 2 | | | 2 | | | 2 | | | | 2 | | | | 2 | |
| Opposed Ø'ing: N/S-1, E/W-2 or Both-3? | | | 0 | | | 0 | | | 0 | | | | 0 | | | | 0 | |
| Right Turns: FREE-1, NRTOR-2 or OLA-3? | NB-- 0 | SB-- | 0 | NB-- 0 | SB-- | 0 | NB-- 0 | SB-- | 0 | | NB-- 0 | SB-- | 0 | | NB-- 0 | SB-- | 0 | |
| | EB-- 0 | WB-- | 0 | EB-- 0 | WB-- | 0 | EB-- 0 | WB-- | 0 | | EB-- 0 | WB-- | 0 | | EB-- 0 | WB-- | 0 | |
| ATSAC-1 or ATSAC+ATCS-2? | | | 2 | | | 2 | | | 2 | | | | 2 | | | | 2 | |
| Override Capacity | | | 0 | | | 0 | | | 0 | | | | 0 | | | | 0 | |

| | MOVEMENT | Volume | No. of Lanes | Lane Volume | Project Traffic | Total Volume | Lane Volume | Added Volume | Total Volume | No. of Lanes | Lane Volume | Added Volume | Total Volume | No. of Lanes | Lane Volume | Added Volume | Total Volume | No. of Lanes | Lane Volume |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NORTHBOUND | Left | 25 | 0 | 25 | 0 | 25 | 25 | 0 | 27 | 0 | 27 | 0 | 27 | 0 | 27 | 0 | 27 | 0 | 27 |
| | Left-Through | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Through | 1 | 0 | **45** | 0 | 1 | **45** | 0 | 1 | 0 | **49** | 0 | 1 | 0 | **49** | 0 | 1 | 0 | **49** |
| | Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Right | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 21 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 21 | 0 | 0 |
| | Left-Through-Right | | 1 | | | | | | | 1 | | | | 1 | | | | 1 | |
| | Left-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| SOUTHBOUND | Left | 278 | 0 | **278** | 18 | 296 | **296** | 0 | 301 | 0 | **301** | 18 | 319 | 0 | **319** | 0 | 319 | 0 | **319** |
| | Left-Through | | 1 | | | | | | | 1 | | | | 1 | | | | 1 | |
| | Through | 1 | 0 | 279 | 0 | 1 | 297 | 0 | 1 | 0 | 302 | 0 | 1 | 0 | 320 | 0 | 1 | 0 | 320 |
| | Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Right | 180 | 1 | 148 | 0 | 180 | 148 | 0 | 195 | 1 | 160 | 0 | 195 | 1 | 160 | 0 | 195 | 1 | 160 |
| | Left-Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Left-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| EASTBOUND | Left | 65 | 1 | 65 | 0 | 65 | 65 | 0 | 70 | 1 | 70 | 0 | 70 | 1 | 70 | 0 | 70 | 1 | 70 |
| | Left-Through | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Through | 1781 | 2 | **891** | 0 | 1781 | **891** | 8 | 1936 | 2 | **968** | 0 | 1936 | 2 | **968** | 0 | 1936 | 2 | **968** |
| | Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Right | 11 | 1 | 11 | 0 | 11 | 11 | 0 | 12 | 1 | 12 | 0 | 12 | 1 | 12 | 0 | 12 | 1 | 12 |
| | Left-Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Left-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| WESTBOUND | Left | 26 | 1 | **26** | 0 | 26 | **26** | 0 | 28 | 1 | **28** | 0 | 28 | 1 | **28** | 0 | 28 | 1 | **28** |
| | Left-Through | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Through | 799 | 2 | 400 | 0 | 799 | 400 | 8 | 873 | 2 | 437 | 0 | 873 | 2 | 437 | 0 | 873 | 2 | 437 |
| | Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Right | 57 | 1 | 57 | 13 | 70 | 70 | 0 | 62 | 1 | 62 | 13 | 75 | 1 | 75 | 0 | 75 | 1 | 75 |
| | Left-Through-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| | Left-Right | | 0 | | | | | | | 0 | | | | 0 | | | | 0 | |
| CRITICAL VOLUMES | | North-South: | | 323 | North-South: | | 341 | North-South: | | | 350 | North-South: | | | 368 | North-South: | | | 368 |
| | | East-West: | | 917 | East-West: | | 917 | East-West: | | | 996 | East-West: | | | 996 | East-West: | | | 996 |
| | | SUM: | | 1240 | SUM: | | 1258 | SUM: | | | 1346 | SUM: | | | 1364 | SUM: | | | 1364 |
| VOLUME/CAPACITY (V/C) RATIO: | | | | 0.827 | | | 0.839 | | | | 0.897 | | | | 0.909 | | | | 0.909 |
| V/C LESS ATSAC/ATCS ADJUSTMENT: | | | | 0.727 | | | 0.739 | | | | 0.797 | | | | 0.809 | | | | 0.809 |
| LEVEL OF SERVICE (LOS): | | | | C | | | C | | | | C | | | | D | | | | D |

*REMARKS:*

Version: 1i Beta; 8/4/2011

**PROJECT IMPACT**

Change in *v/c* due to project: 0.012 — Δ*v/c* after mitigation: 0.012

Significant impacted? NO — Fully mitigated? N/A