Appendix E Traffic Impacts Assessment

Appendices

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TRAFFIC AND PARKING IMPACT ANALYSIS

FOR THE PROPOSED

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

Prepared for

REDLANDS UNIFIED SCHOOL DISTRICT
&
PLACEWORKS

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I.
INTRODUCTION AND STUDY METHODOLOGY

This report summarizes the results of a traffic and parking impact analysis that was conducted for a new track and field/football stadium proposed at Redlands East Valley High School. The high school campus is located on the south side of Colton Avenue between Opal Avenue and King Street in an unincorporated area of San Bernardino County immediately east of Redlands. The stadium would be located at the west end of the campus near the intersection of Colton Avenue and Opal Avenue.

The proposed project involves the construction of the stadium, bleachers with seats for 3,000 people, stadium lighting, two ticket booth/custodial/restrooms/concession buildings, and improvements to the adjacent parking lot. Site plans for each of the three phases of the proposed project are provided in the Appendix. The proposed project would not result in a change in the number of students attending the high school. The stadium would provide the opportunity for Redlands East Valley High School to hold home games at its own campus.

An analysis has been prepared to evaluate the traffic and parking impacts of the proposed project. The methodology for the traffic study, in general, was to 1) establish the existing baseline traffic conditions on the streets that provide access to the school site, 2) project the future baseline traffic conditions for the target year of completion for the proposed project (year 2026), 3) estimate the levels of traffic that would be generated by the stadium for a capacity-level event, 4) conduct a comparative analysis of traffic conditions with and without the stadium, 5) evaluate the vehicle miles traveled (VMT) impacts of the proposed stadium, and 6) evaluate the parking supply and demand during a stadium event. The stadium analysis is based on Friday evening traffic conditions on the streets and intersections in the proposed project vicinity.

The traffic analysis addresses the impacts at 10 intersections in the vicinity of the school site. The study area intersections, the type of traffic control at each intersection, and the public agency with jurisdictional responsibility for the intersection are listed below in Table 1.

TABLE 1
STUDY AREA INTERSECTIONS

Intersection	***Traffic Control***	***Jurisdiction***
Mentone Blvd/Opal Avenue	Stop Signs on Opal Ave	Caltrans
Mentone Blvd/Beryl Avenue	Stop Signs on Beryl Ave	Caltrans
Mentone Blvd/Agate Avenue	Stop Signs on Agate Ave	Caltrans
Colton Avenue/Wabash Avenue	4-Way Stop Signs	Redlands/San Bernardino County
Colton Avenue/Opal Avenue	4-Way Stop Signs	San Bernardino County
Colton Avenue/Beryl Avenue-School Driveway	4-Way Stop Signs	San Bernardino County
Colton Avenue/Agate Avenue-King Street	4-Way Stop Signs	San Bernardino County
Colton Avenue/Crafton Avenue	4-Way Stop Signs	San Bernardino County
Citrus Avenue/Opal Avenue	4-Way Stop Signs	San Bernardino County
Citrus Avenue/King Street	4-Way Stop Signs	San Bernardino County

The traffic impact analysis is based on an evaluation of the levels of service at the affected study area intersections. Level of service (LOS) is an industry standard by which the operating conditions

of a roadway segment or an intersection are measured. LOS is defined on a scale of A through F with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS A is characterized as having free flowing traffic conditions with no restrictions on maneuvering or operation speeds, where traffic volumes are low and travel speeds are high. LOS F is characterized as having forced flow with many stoppages and low operating speeds. According to San Bernardino County standards, LOS A through D represents acceptable conditions, while LOS E and F represent congested, over-capacity conditions. According to the San Bernardino County Congestion Management Program, LOS A through E represents acceptable conditions while LOS F represents unacceptable conditions. The levels of service at the study area intersections were determined by using the Highway Capacity Manual methodology, which is consistent with the guidelines for traffic impact studies from the San Bernardino County Congestion Management Program.

The levels of service for the intersections in the vicinity of the proposed project were analyzed for the following scenarios: existing conditions (2021), existing conditions plus the proposed project, future baseline conditions without the proposed project for the target year of 2026, and future conditions with the proposed project. The year 2026 was used for the future target year as that is anticipated to be the year of completion for the third and final phase of the proposed project.

II.
EXISTING AND FUTURE BASELINE TRAFFIC CONDITIONS

The roadway network in the proposed project vicinity, the existing traffic volumes, and the levels of service at the affected study area intersections are described below.

Street Network

The streets that provide access to the proposed project area include Colton Avenue, Opal Avenue, King Street, Agate Avenue, Beryl Avenue, Mentone Boulevard (State Route 38), Citrus Avenue, Wabash Avenue, and Crafton Avenue. The following paragraphs provide a brief description of the characteristics of these streets. A figure showing the existing roadway characteristics is provided as Figure 1 in the Appendix.

Colton Avenue

Colton Avenue is a two to four lane east-west street that abuts the north side of the school campus. It has four lanes west of Agate Avenue/King Street, three lanes between Agate Avenue and Crafton Avenue (one eastbound and two westbound), and two lanes east of Crafton Avenue. The speed limit on Colton Avenue is 35 miles per hour and there are three school access driveways on Colton Avenue.

Opal Avenue

Opal Avenue is a two lane north-south street that abuts the west side of the school campus. It runs along the west side of the stadium site. The speed limit on Opal Avenue is 35 miles per hour and there is a driveway on Opal Avenue that provides access to a parking lot.

King Street/Agate Avenue

King Street/Agate Avenue is a two lane north-south street that abuts the east side of the school campus. This street is called King Street south of Colton Avenue and Agate Avenue north of Colton Avenue. The speed limit on King Street/Agate Avenue is 25 miles per hour and there are two school access driveways on King Street.

Beryl Avenue

Beryl Avenue is a two lane north-south street that extends north from the school's main driveway. The driveway is the south leg of the Beryl Avenue/Colton Avenue intersection. The speed limit on Beryl Avenue is 25 miles per hour.

Mentone Boulevard (State Route 38)

Mentone Boulevard is a two lane east-west State highway that is located one-half mile north of the school campus. The speed limit on Mentone Boulevard is 40 miles per hour.

Citrus Avenue

Citrus Avenue is a two lane east-west street located one-quarter mile south of the school campus. The speed limit on Citrus Avenue is 45 miles per hour.

Wabash Avenue

Wabash Avenue is a four lane north-south street located one-quarter mile west of the school campus. The speed limit on Wabash Avenue is 40 miles per hour.

Crafton Avenue

Crafton Avenue is a two lane north-south street located one-quarter mile east of the school campus. The speed limit on Crafton Avenue is 35 miles per hour.

Existing Traffic Volumes

Manual traffic counts were taken at the 10 study area intersections during the Friday evening peak period on November 12, 2021. The peak hour for this analysis refers to the one-hour time period prior to the beginning of an event at the stadium when patrons are traveling to the stadium. The traffic analysis addresses the pre-event time period because the ambient traffic volumes are substantially higher during the pre-event period (generally between 6:00 and 7:00 p.m.) as compared to the post-event period (after 9:00 p.m.). Most high school football games in this district begin at 7:00 p.m. A figure that illustrates the existing peak hour traffic volumes and turning movements is provided as Figure 2 in the Appendix.

Existing Intersection Levels of Service

To quantify the existing baseline traffic conditions, the 10 study area intersections were analyzed to determine their operating conditions during the Friday evening peak hour. Based on the hourly traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the average vehicle delay values and corresponding levels of service have been determined for each intersection, as summarized in Table 2.

TABLE 2
EXISTING AND FUTURE INTERSECTION LEVELS OF SERVICE

	Delay Value (seconds/vehicle) & Level of Service Friday Evening Pre-Event Peak Hour	
Intersection	***Existing Conditions***	***2026 Without Project***
Mentone Blvd/Opal Avenue	17.8 – C	21.0 – C
Mentone Blvd/Beryl Avenue	18.8 – C	22.5 – C
Mentone Blvd/Agate Avenue	24.5 – C	30.2 – D
Colton Avenue/Wabash Avenue	9.92 – A	10.38 – B
Colton Avenue/Opal Avenue	7.97 – A	8.10 – A
Colton Avenue/Beryl Avenue-School Driveway	7.99 – A	8.10 – A
Colton Avenue/Agate Avenue-King Street	7.86 – A	7.97 – A
Colton Avenue/Crafton Avenue	9.98 – A	10.50 – B
Citrus Avenue/Opal Avenue	7.70 – A	7.81 – A
Citrus Avenue/King Street	7.87 – A	7.97 – A

The levels of service shown in Table 2 are based on the average vehicle delay values that were calculated for each intersection using the Highway Capacity Software. The relationship between the average delay values and levels of service is shown in Table 3.

TABLE 3
RELATIONSHIP BETWEEN DELAY VALUES & LEVELS OF SERVICE

Level of Service	***Delay Value (seconds) Unsignalized Intersections***
A	0.0 to 10.0
B	> 10.0 to 15.0
C	> 15.0 to 25.0
D	> 25.0 to 35.0
E	> 35.0 to 50.0
F	> 50.0

As shown in Table 2, all 10 of the study area intersections currently operate at acceptable levels of service (LOS A through D) during the Friday evening peak hour. Seven intersections operate at LOS A and three intersections operate at LOS C. It should be noted that the delay and LOS values for the intersections with 4-way stop signs represent the average for the entire intersection while the delay and LOS values for the intersections with 2-way stop signs represent the intersection approach that has the highest level of delay at the stop sign.

Future Baseline Traffic Conditions

As the proposed project is expected to be fully completed in the year 2026, the existing (2021) traffic volumes were expanded by a growth factor of 10.4 percent to account for general regional growth and the cumulative impacts of traffic associated with other development projects in the area. This growth factor represents a two percent annual growth rate for five years (compounded annually). The projected traffic volumes for the year 2026 without the proposed project are shown on Figure 3 in the Appendix.

Based on the projected peak hour traffic volumes, the turning movement counts, and the existing lane configuration, the future baseline levels of service were calculated for each study area intersection, as summarized in Table 2.

For the target year of 2026, all 10 of the study area intersections are projected to operate at acceptable levels of service (LOS A through D) as five of the intersections would operate at LOS A, two intersections would operate at LOS B, two intersections would operate at LOS C, and one intersection would operate at LOS D. These traffic conditions represent a Friday evening pre-event peak hour.

III.
TRAFFIC IMPACT ANALYSIS

This section summarizes the analysis of the proposed project's impacts on study area traffic conditions. First is a discussion of project generated traffic volumes. This is followed by an analysis of the impacts of the proposed project on traffic volumes and intersection levels of service. Then the impacts associated with vehicle miles traveled (VMT), construction, parking, and safety are presented.

Standards of Significance

According to the San Bernardino County standards, an intersection would be significantly impacted if a project would result in a change in the level of service from an acceptable LOS A, B, C, or D to an unacceptable LOS E or F. The impacts would not be significant at locations that are projected to operate at LOS A, B, C, or D after project completion. According to the Caltrans standards, Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, however, Caltrans acknowledges that this may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, an acceptable measure of effectiveness (MOE) should be maintained.

With regard to the CEQA thresholds of significance, Appendix G of the CEQA Guidelines state that a project would normally have a significant effect on the environment if the project could:

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities,

T-2 Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT),

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), or

T-4 Result in inadequate emergency access.

Project Generated Traffic

The volume of traffic that would be generated by the stadium for a capacity-level event was determined in order to estimate the impacts of the proposed project on the study area streets and intersections. The trip generation rates and the anticipated volumes of traffic that would be generated by the stadium when operated at capacity are shown in Table 4. The table shows the traffic volumes for a 3,000-seat stadium.

The trip generation rates shown in Table 4 reflect the assumption that the stadium would generate a demand of one vehicle for every four seats (for vehicles that remain parked at the site) and that an additional ten percent of the vehicles arriving at the stadium would drop passengers off then leave. The rate of one vehicle for every four seats is based on the parking requirements for places of public assembly from the City of Redlands Municipal Code, which is one space per five fixed seats, and the parking requirement for stadiums according to San Bernardino County, which is one

space for every three seats. The average of these two parking requirements is one space for every four seats.

TABLE 4
PROJECT GENERATED TRAFFIC

Facility	Evening Hour – Pre-Event			Daily Traffic
	Inbound	Outbound	Total	
TRIP GENERATION RATES				
Stadium (vehicle trips per seat)	0.275	0.025	0.30	0.60
GENERATED TRAFFIC VOLUMES				
Stadium (3,000 seats)	825	75	900	1,800

Table 4 indicates that the 3,000-seat stadium would generate an estimated 900 vehicle trips during the peak hour (825 inbound and 75 outbound). The peak hour for this analysis represents the one-hour time period prior to the beginning of an event at the stadium when patrons are traveling to the stadium. Approximately the same level of traffic would be generated at the end of an event when patrons are exiting (with the inbound and outbound traffic volumes reversed). The stadium may also generate traffic at other times of the day; however, such traffic activity would be minor as compared to a capacity-level event represented by the traffic volumes shown in Table 4. The estimated daily traffic volume generated by the stadium on the day of a capacity-level event would be 1,800 vehicle trips per day.

To quantify the increase in traffic at each intersection resulting from an event at the proposed stadium, the project generated traffic was geographically distributed onto the street network using the directional percentages shown on Figure 4 in the Appendix. This distribution assumption is based on the layout of the existing street network, the school attendance boundaries, and the anticipated geographical distribution of the event patrons.

Using the generated traffic volumes shown in Table 4 and the geographical distribution assumptions outlined above, the volumes of proposed project traffic on each access street and at each study area intersection were determined for the traffic impact analysis. The volumes of site generated traffic that would be generated by the 3,000-seat stadium are shown on Figure 4 in the Appendix.

The volumes of traffic for the existing conditions scenario plus the project generated traffic are shown on Figure 5 and the total volumes of traffic projected for the year 2026 scenario with the proposed stadium are shown on Figure 6. These projected traffic volumes are for the Friday evening pre-event peak hour.

Intersection Impact Analysis

The impact analysis for the 10 study area intersections was conducted by comparing the delay values and levels of service (LOS) for the "without project" and "with project" scenarios. For the existing conditions scenario, the analysis compares the existing conditions to the conditions with the proposed project. Similarly, for the year 2026 scenario, the analysis compares the year 2026 baseline conditions without the proposed project to the year 2026 scenario with the proposed

project. The year 2026 was used as the target year for future conditions as that is anticipated to be the year that all three phases of the proposed project would be completed. The peak hour for the analysis represents the time period during which the stadium would generate the heaviest volumes of traffic (typically between 6:00 and 7:00 p.m.), which does not coincide with the peak period for the ambient traffic volumes, which generally occurs between 4:00 and 6:00 p.m.

The comparative levels of service at the study area intersections for the existing conditions scenario are summarized in Table 5 for the Friday evening peak hour. The table shows the before and after delay values and the levels of service that would occur at each study area intersection. Also shown are the increases in the delay values that would occur as a result of the proposed project. The last column in Table 5 indicates if the intersections would be significantly impacted by the project generated traffic.

The intersection of Mentone Boulevard and Opal Avenue, for example, would operate with an average delay value of 17.8 seconds per vehicle and LOS C for existing conditions and with an average delay value of 28.0 seconds and LOS D for the existing plus project scenario, which represents an increase in average delay of 10.2 seconds per vehicle. This impact would be less than significant according to the criteria outlined above because the intersection would continue to operate at an acceptable LOS D. Table 5 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed project for the existing conditions baseline scenario.

TABLE 5
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
EXISTING CONDITIONS AS BASELINE

	Delay Value & Level of Service			
Intersection	***Existing Conditions***	***Existing plus Project***	***Increase In Delay Value***	***Significant Impact***
Mentone Blvd/Opal Avenue	17.8 – C	28.0 – D	10.2	No
Mentone Blvd/Beryl Avenue	18.8 – C	23.5 – C	4.7	No
Mentone Blvd/Agate Avenue	24.5 – C	27.0 – D	2.5	No
Colton Avenue/Wabash Avenue	9.92 – A	13.28 – B	3.36	No
Colton Avenue/Opal Avenue	7.97 – A	11.51 – B	3.54	No
Colton Avenue/Beryl Avenue-School Driveway	7.99 – A	15.26 – C	7.27	No
Colton Avenue/Agate Avenue-King Street	7.86 – A	8.56 – A	0.70	No
Colton Avenue/Crafton Avenue	9.98 – A	10.32 – B	0.34	No
Citrus Avenue/Opal Avenue	7.70 – A	8.13 – A	0.43	No
Citrus Avenue/King Street	7.87 – A	8.06 – A	0.19	No

The comparative levels of service for the year 2026 analysis scenario are shown in Table 6. Table 6 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed project for the year 2026 baseline scenario.

TABLE 6
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
YEAR 2026 AS BASELINE

	Delay Value & Level of Service			
Intersection	***2026 Without Project***	***2026 With Project***	***Increase In Delay Value***	***Significant Impact***
Mentone Blvd/Opal Avenue	21.0 – C	34.6 – D	13.6	No

Mentone Blvd/Beryl Avenue	22.5 – C	29.3 – D	6.8	No
Mentone Blvd/Agate Avenue	30.2 – D	34.3 – D	4.1	No
Colton Avenue/Wabash Avenue	10.38 – B	14.18 – B	3.80	No
Colton Avenue/Opal Avenue	8.10 – A	11.84 – B	3.74	No
Colton Avenue/Beryl Avenue-School Driveway	8.10 – A	16.15 – C	8.05	No
Colton Avenue/Agate Avenue-King Street	7.97 – A	8.69 – A	0.72	No
Colton Avenue/Crafton Avenue	10.50 – B	10.91 – B	0.41	No
Citrus Avenue/Opal Avenue	7.81 – A	8.26 – A	0.45	No
Citrus Avenue/King Street	7.97 – A	8.18 – A	0.21	No

Tables 5 and 6 indicate that the proposed project would not have a significant impact at any of the study area intersections during the evening peak hour based on the significance criteria presented previously because the intersections would continue to operate at LOS D or better. As there would be no significant impacts, no capacity-related mitigation measures would be required. It should be noted that this conclusion is based on the assumption that an event would begin at 7:00 p.m. If a capacity-level event were scheduled to begin at 6:00 p.m. on a Monday through Friday, the site-generated traffic would coincide with the peak commuter traffic and the event would likely result in a significant impact.

The traffic impacts associated with the stadium would not occur on a daily basis but would occur only when a major event were to be held at the facility, which is typically a high school football game. Such events would occur on a Thursday or Friday evening or on a Saturday afternoon on approximately five to six occasions throughout the year. The analysis addresses the Friday evening scenario because the ambient traffic volumes would typically be higher on Friday as compared to Thursday evening or Saturday afternoon.

In addition to the capacity-level high school events that would be held at the stadium in the fall (primarily football games), the stadium would also be used for track and field events, soccer matches and practice, band activities, and possibly Pop Warner football. As the attendance at these activities would be substantially lower than the capacity-level events that were addressed in the traffic analysis above, it is concluded that such activities would result in a less than significant traffic impact. It is anticipated that there would be approximately 60 events per year, most of which would have relatively minor attendance levels typically ranging from 100 to 200 spectators.

For purposes of comparison to a capacity-level event, the traffic generation levels for an event with 100 and 200 spectators were calculated, as shown in Table 7. A 100-spectator event would generate an estimated 30 trips during the peak arrival time and 60 total daily trips. A 200-spectator event would generate 60 trips during the peak arrival time and 120 total daily trips. These traffic volumes are negligible as compared to the level of traffic that would be generated by a capacity-level event at the stadium.

TABLE 7
GENERATED TRAFFIC FOR MINOR EVENTS

Facility	***Peak Hour – Pre-Event***			***Daily Traffic***
	Inbound	***Outbound***	***Total***	
TRIP GENERATION RATES				
Stadium (vehicle trips per seat)	0.275	0.025	0.30	0.60
GENERATED TRAFFIC VOLUMES				
Stadium				
100 spectators	27	3	30	60
200 spectators	55	5	60	120

Construction Traffic Impacts

Construction of the proposed stadium would generate various levels of truck and automobile traffic throughout the duration of the construction period. The construction-related traffic includes construction workers traveling to and from the site as well as trucks hauling construction materials to the site and demolition/excavation material away from the site. The construction activities would generate an estimated 50 to 60 workers' trips per day and approximately 20 to 30 truck trips per day. The truck trips would be spread out throughout the workday and would generally occur during non-peak traffic periods. This level of construction-related traffic would not result in a significant traffic impact on the study area roadway network as it would be negligible compared to the volumes of traffic currently generated by the existing high school.

Congestion Management Program

According to the "Guidelines for CMP Traffic Impact Analysis Reports in San Bernardino County" (from the San Bernardino County Congestion Management Program), the minimum level of service standard for the CMP system of highways and roadways is LOS E. There is one CMP arterial roadway in the immediate vicinity of the proposed project site: Mentone Boulevard (State Route 38). The traffic analysis summarized above indicates that the three most-directly affected intersections on Mentone Boulevard would operate at LOS D for the "2026 with project" scenario, which is better than the CMP standard of LOS E. The project generated traffic would not, therefore, result in a significant impact on the CMP roadway network. It should also be pointed out that the evaluation of a development project is typically based on the impacts of the project during the morning and/or afternoon commuter peak periods; i.e., from 7:00 to 9:00 a.m. and/or from 4:00 to 6:00 p.m. The proposed project would have negligible impacts during the morning or afternoon peak commuter periods because the peak stadium traffic would occur between 6:00 and 7:00 p.m., which is outside the afternoon commuter peak periods that are addressed in the CMP. The proposed project would not, therefore, exceed a level of service standard established by the county congestion management agency.

Non-Motorized Transportation and Transit

The proposed project would generate a demand for non-motorized travel as some event patrons would travel to and from the school as pedestrians or on bicycles. The streets adjacent to the school have sidewalks along one or both sides of the street and the intersections along the Colton Avenue

frontage of the school are equipped with four-way stop signs and painted crosswalks. Bike racks are available at the school and bus loading/unloading zones are provided on site.

With regard to public transit, Omnitrans operates Line 8 in the vicinity of the school site on Mentone Boulevard and Crafton Avenue. The proposed project would not adversely affect the performance of these transit or non-motorized transportation facilities and would not conflict with any plans or policies relative to these transportation modes.

The proposed project would be consistent with policies supporting alternative transportation because busing would typically be provided from the opposing schools during football games and bike racks are currently provided at the school. The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Vehicle Miles Traveled (VMT)

The CEQA Guidelines state that projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact. The events and activities that would occur at the proposed stadium are currently held at Citrus Valley High School or at Redlands High School if the field at Citrus Valley High School is not available. These schools are outside the attendance area of Redlands East Valley High School.

Citrus Valley High School is located 4.9 miles northwest of Redlands East Valley High School (as measured along the travel routes on the streets) and Redlands High School is located 2.8 miles to the west of Redlands East Valley High School. As a comparison, the proposed stadium at Redlands East Valley High School is located within two miles of the majority of the homes within the attendance area. So the proposed project would result in shorter travel distances for most of the people who would be attending games, practices, events, and other activities at the stadium. The proposed project would, therefore, result in a reduction in total vehicle miles traveled and would have a less than significant impact on VMT.

Traffic Hazards and Incompatible Uses

Access to the proposed project site would be provided by existing driveways at Redlands East Valley High School, which includes three driveways along Colton Avenue, two driveways along King Street, and one driveway on Opal Avenue. The increased levels of traffic, the increased number of pedestrians, and the increased number of vehicular turning movements at the school entrances and at the nearby intersections would result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring. These impacts would not be significant, however, because the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating school-related traffic on a daily basis. The addition of a stadium would be compatible with the design and operation of a high school and the proposed project would not result in any major modifications to the existing access or circulation features at the school.

Most of the streets in the vicinity of the school site have sidewalks adjacent to the street and the intersections along the Colton Avenue frontage of the school are equipped with four-way stop signs and painted crosswalks. These features would enhance pedestrian safety and facilitate

pedestrian access to the school. The proposed project would not, therefore, substantially increase hazards due to a geometric design feature or incompatible uses.

Emergency Access

The existing access and circulation features at the school, including the on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles, and the proposed stadium would be designed to accommodate emergency access to the facility. Any modifications to the access features are subject to and must satisfy the District and the San Bernardino County design requirements and would be subject to approval by the Fire Department. Emergency vehicles could easily access the stadium and all other areas of the school via on-site travel corridors. The proposed project would not, therefore, result in inadequate emergency access.

Parking Impacts

There are two issue areas relative to the proposed project's parking impacts: 1) parking during construction and 2) parking during events at the stadium. These issue areas are presented below.

Parking during Construction

The primary parking impact that would occur during construction is that there would be parking demands associated with the construction vehicles, including workers' vehicles, trucks, and equipment. These parking demands could result in a significant parking impact if the vehicles and equipment were to be parked and stored along the public streets in the proposed project vicinity. This impact can be mitigated by requiring the construction contractor to provide an off-street parking/storage area for vehicles and equipment, as described in Recommendation T-1.

Recommendation:

T-1. Require the construction contractor to provide an off-street staging area that would be used for parking/storage of construction vehicles and equipment. This staging area should be within the school property if possible.

Parking during Stadium Events

According to the parking requirements for the City of Redlands, a place of public assembly (which includes a stadium) has a parking requirement of one space for every five fixed seats. Based on this standard, the proposed 3,000-seat stadium would generate a parking requirement of 600 spaces during a capacity-level event. In the San Bernardino County Development Code, Chapter 83.11, "Parking and Loading Standards," indicates that the parking requirement for a stadium is one space for each 3 fixed seats (Table 83-15, Parking Requirements by Land Use). Based on this rate, the proposed 3,000-seat stadium would require 1,000 parking spaces.

According to the site plan for the proposed project, Redlands East Valley High School would be provided with 1,086 parking spaces, which includes 858 spaces within the school's main campus, 78 spaces in the parking lot adjacent to the football field that is accessed from Opal Avenue, and 150 spaces that would be provided at the outdoor basketball courts adjacent to the stadium at the

southeast corner of Colton Avenue and Opal Avenue. As the on-site parking supply would exceed the parking requirements of the City of Redlands and San Bernardino County, the proposed project would not result in a significant parking impact.

IV.
SUMMARY OF IMPACTS AND CONCLUSIONS

The key findings of the traffic impact analysis are presented below.

- The proposed 3,000-seat stadium would generate an estimated 900 vehicle trips during the peak hour (825 inbound and 75 outbound) for a capacity-level event. The peak hour for this analysis represents the one-hour time period prior to the beginning of an event at the stadium when patrons are traveling to the stadium, which would typically occur on a Friday evening between 6:00 and 7:00 p.m. Approximately the same level of traffic would be generated at the end of an event when patrons are exiting (with the inbound and outbound traffic volumes reversed).
- An analysis of 10 intersections in the vicinity of the school indicates that the traffic generated by the stadium would not result in a significant impact at any of the intersections according to the San Bernardino County and Caltrans significance criteria.
- It is projected that the stadium would accommodate 60 events per year, including football practice and games, soccer practice and games, track and field practice and events, band events, and other activities such as Pop Warner football. These events would have an estimated 100 to 200 spectators, which would generate 30 to 60 vehicle trips during the peak hour. This level of project generated traffic would have a negligible impact on traffic conditions.
- CEQA threshold of significance T-1 asks if the proposed project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The analysis indicates that the impact would be less than significant because:

  -The level of service or CMP thresholds would not be exceeded during construction or operation, and

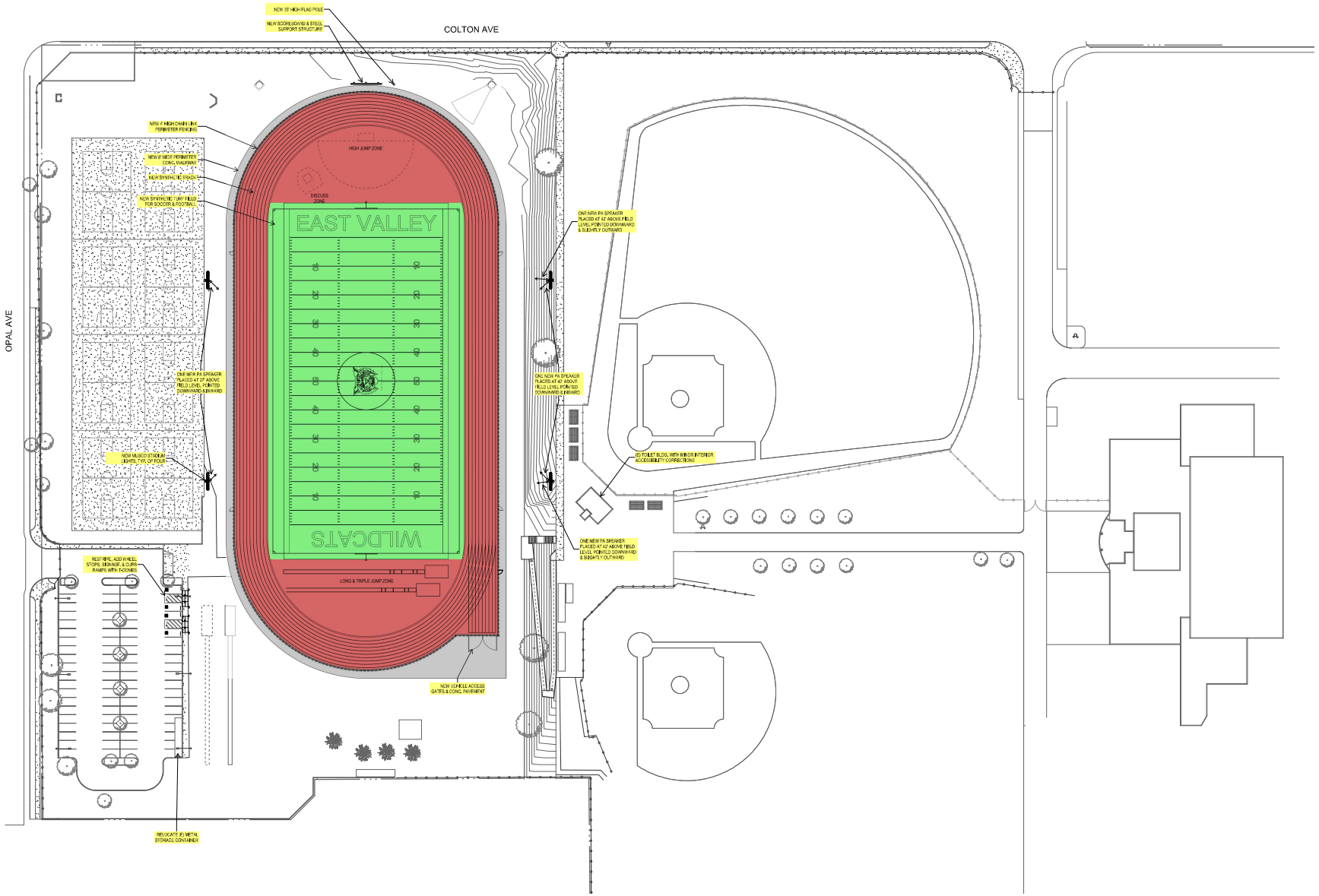
  -The proposed project would not adversely affect the performance or safety of any transit or non-motorized transportation facilities (pedestrians and bicycles) and would not conflict with any adopted plans, policies, or programs relative to these alternative transportation modes.
- CEQA threshold of significance T-2 asks if the proposed project would conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT). The analysis indicates that the impact would be less than significant because the proposed project would result in a reduction in total vehicle miles traveled as the proposed stadium would be closer to most of the homes in the attendance area as compared to the fields where the activities currently take place.
- CEQA threshold of significance T-3 asks if the proposed project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The analysis indicates that the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating school-related traffic. The addition of a stadium would be compatible with the design and operation of a high school and the proposed project would not result in any major modifications to the existing access or circulation features

at the school. So the proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses.

- CEQA threshold of significance T-4 asks if the proposed project would result in inadequate emergency access. The existing access and circulation features at the school, including the on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles, and the proposed stadium would be designed to accommodate emergency access to the facility. The proposed project would not result in inadequate emergency access.
- Construction activities associated with the proposed project would generate parking demands for workers' vehicles, trucks, and equipment. These parking demands could result in a significant parking impact if the vehicles and equipment were to be parked and stored along the public streets in the proposed project vicinity. It is recommended that the construction contractor be required to provide an off-street staging area that would be used for parking/storage of construction vehicles and equipment. This staging area should be within the school property if possible.
- Redlands East Valley High School would be provided with 1,086 parking spaces, which includes 858 spaces within the school's main campus, 78 spaces in the parking lot adjacent to the football field that is accessed from Opal Avenue, and 150 spaces that would be provided at the outdoor basketball courts adjacent to the stadium. As the on-site parking supply would exceed the parking requirements of the City of Redlands (600 spaces) and San Bernardino County (1,000 spaces), the proposed project would not result in a significant parking impact.

APPENDIX

SITE PLANS



1 SITE PLAN PHASE 1
SCALE: 1" = 40'-0"

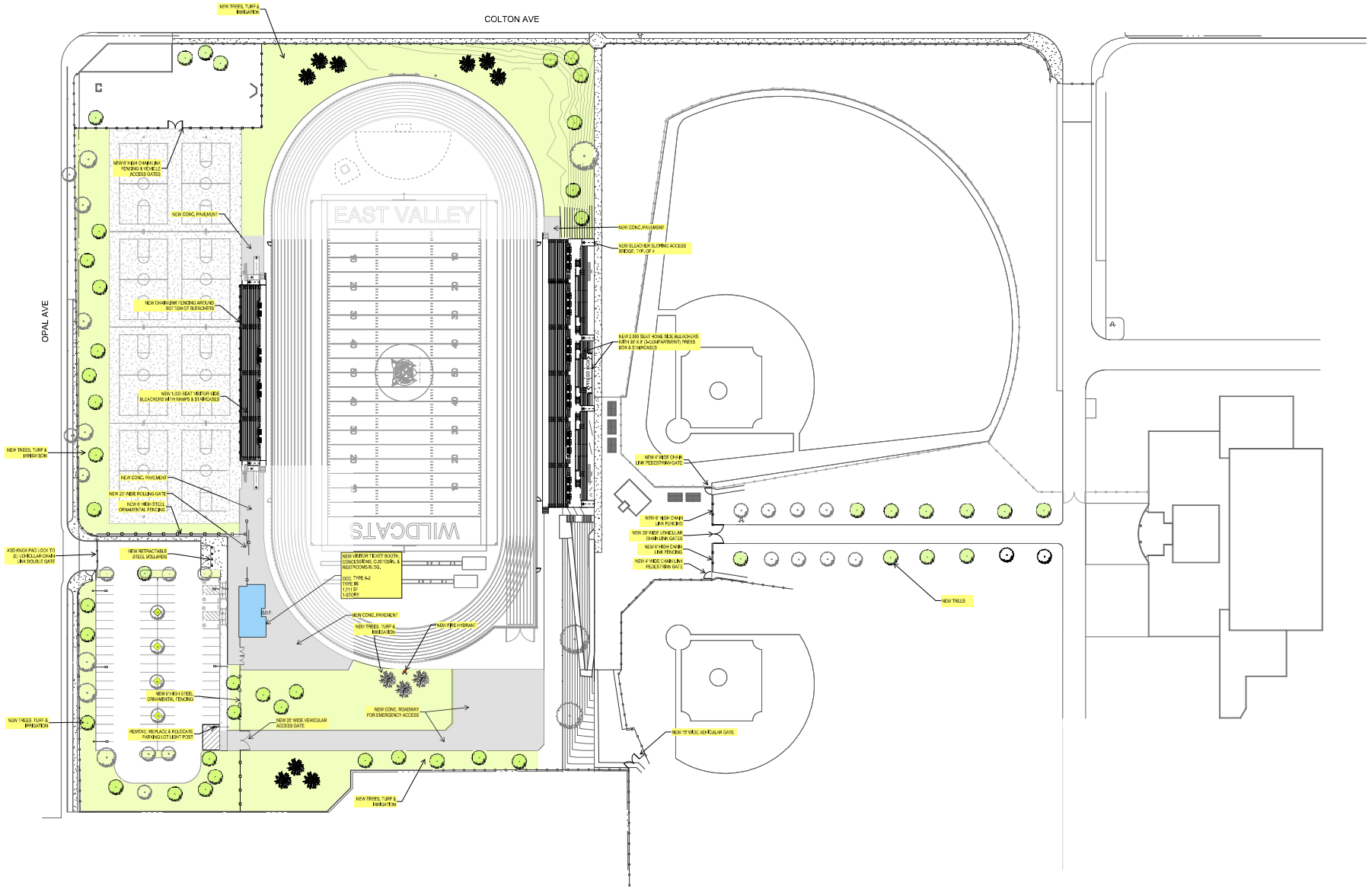
SITE PLAN - PHASE 1

Scale: 1" = 40'-0"

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM
REDLANDS UNIFIED SCHOOL DISTRICT

PROJECT STATUS
01/12/2021

ARCHITECTS
30 South Center Street
Redlands, California 92373
909/792-7397



1 SITE PLAN PHASE 2
SCALE: 1" = 40'-0"

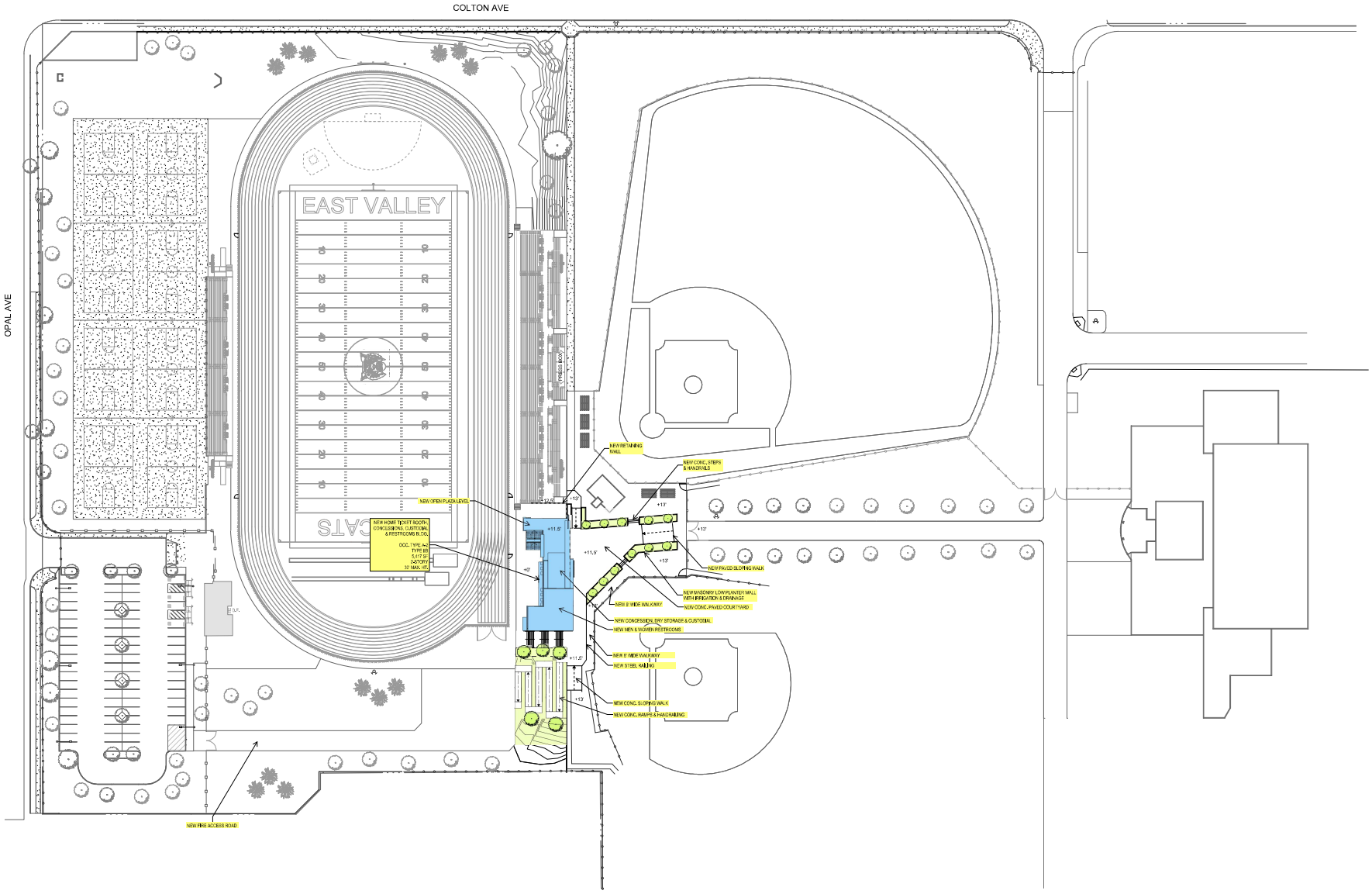
SITE PLAN - PHASE 2

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM
REDLANDS UNIFIED SCHOOL DISTRICT

PROJECT STATUS
01/12/2021

Scale: 1" = 40'-0"

ARCHITECTS
30 South Center Street
Redlands, California 92373
909/792-7397



1 SITE PLAN PHASE 3
SCALE: 1" = 40'-0"

SITE PLAN - PHASE 3

Scale: 1" = 40'-0"

REDLANDS EAST VALLEY HIGH SCHOOL STADIUM
REDLANDS UNIFIED SCHOOL DISTRICT

PROJECT STATUS
01/12/2021

ARCHITECTS
30 South Center Street
Redlands, California 92373
909/792-7397

TRAFFIC FIGURES

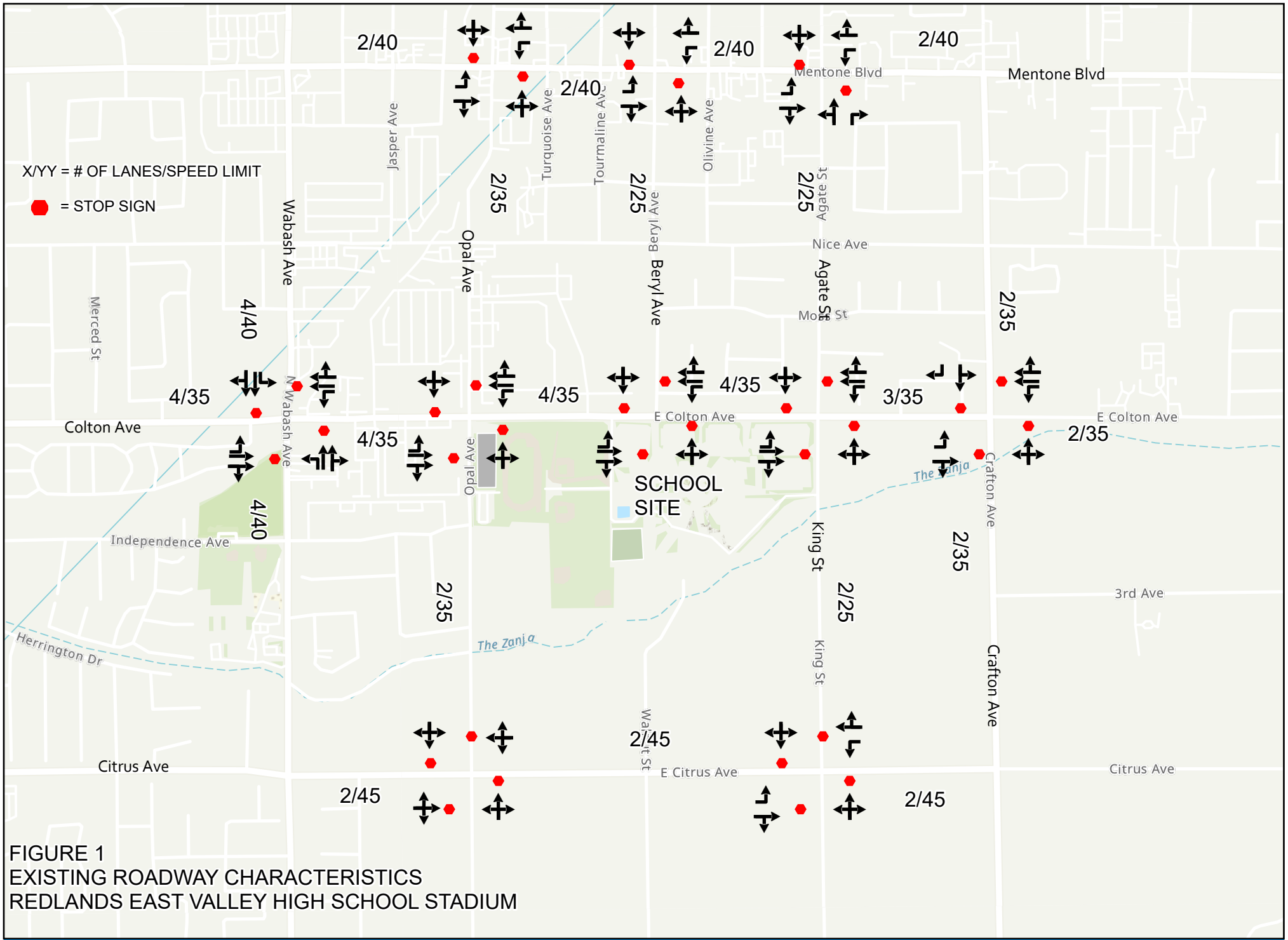


FIGURE 1
EXISTING ROADWAY CHARACTERISTICS
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

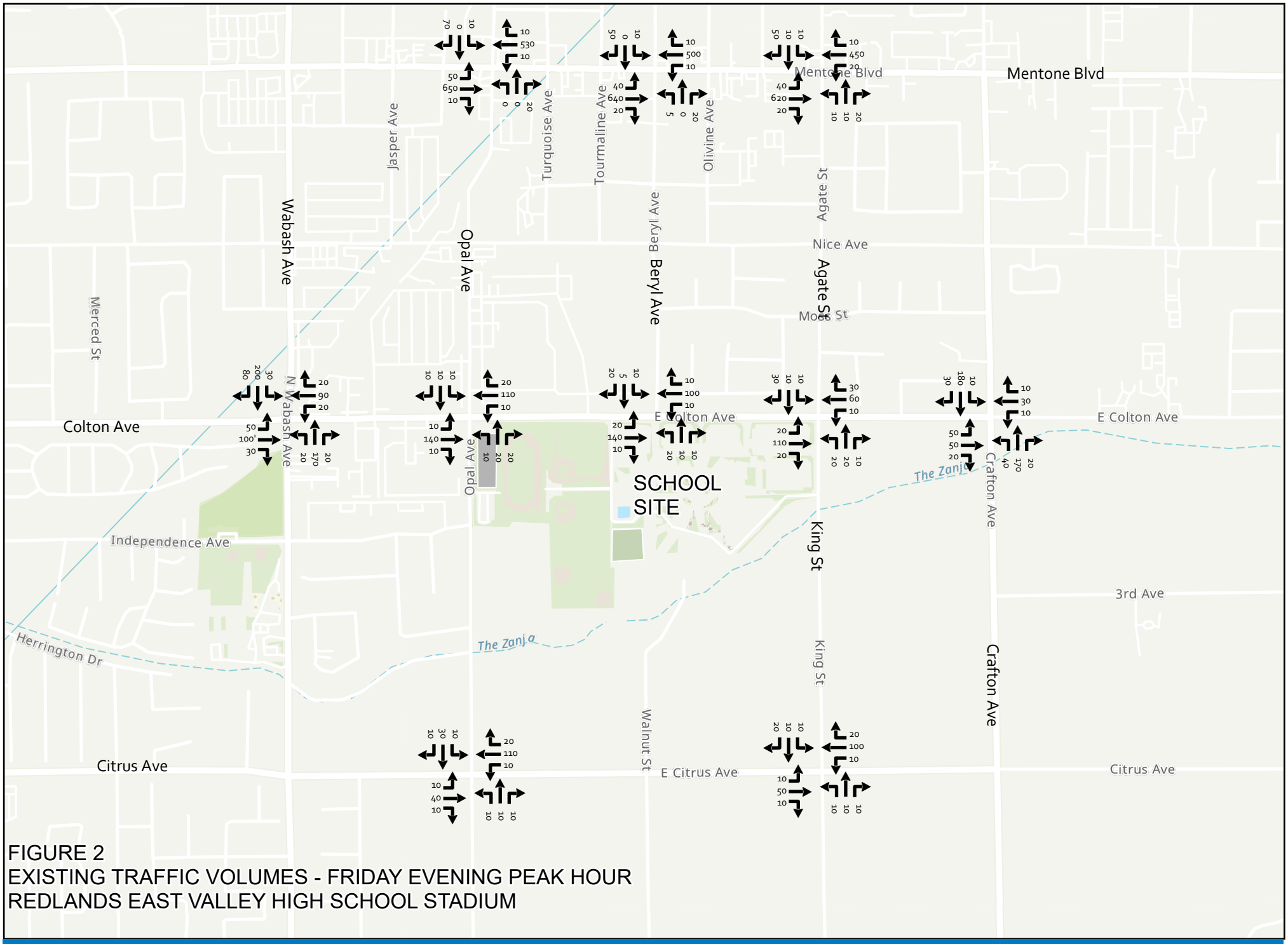


FIGURE 2
EXISTING TRAFFIC VOLUMES - FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

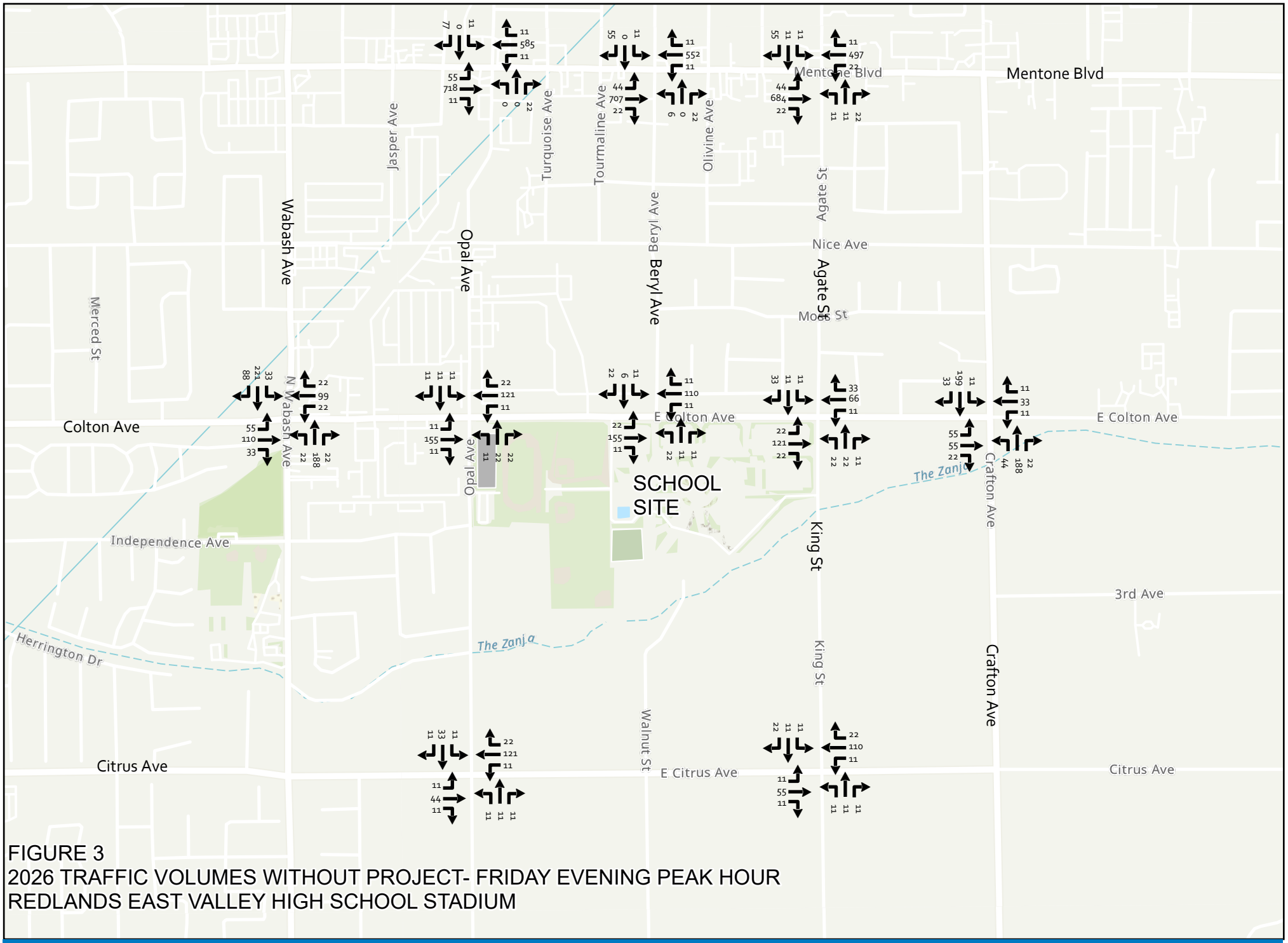


FIGURE 3
2026 TRAFFIC VOLUMES WITHOUT PROJECT- FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

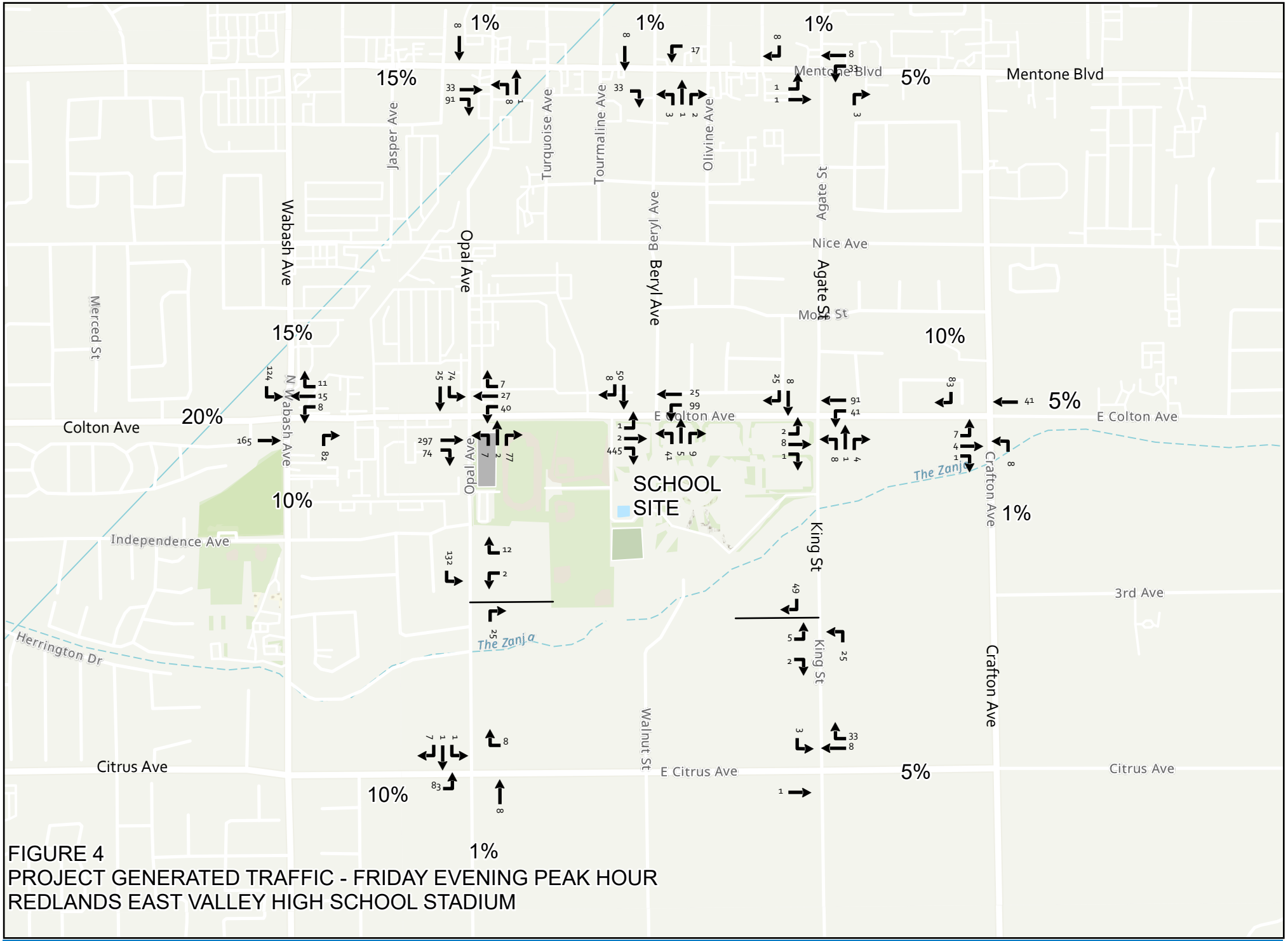


FIGURE 4
PROJECT GENERATED TRAFFIC - FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

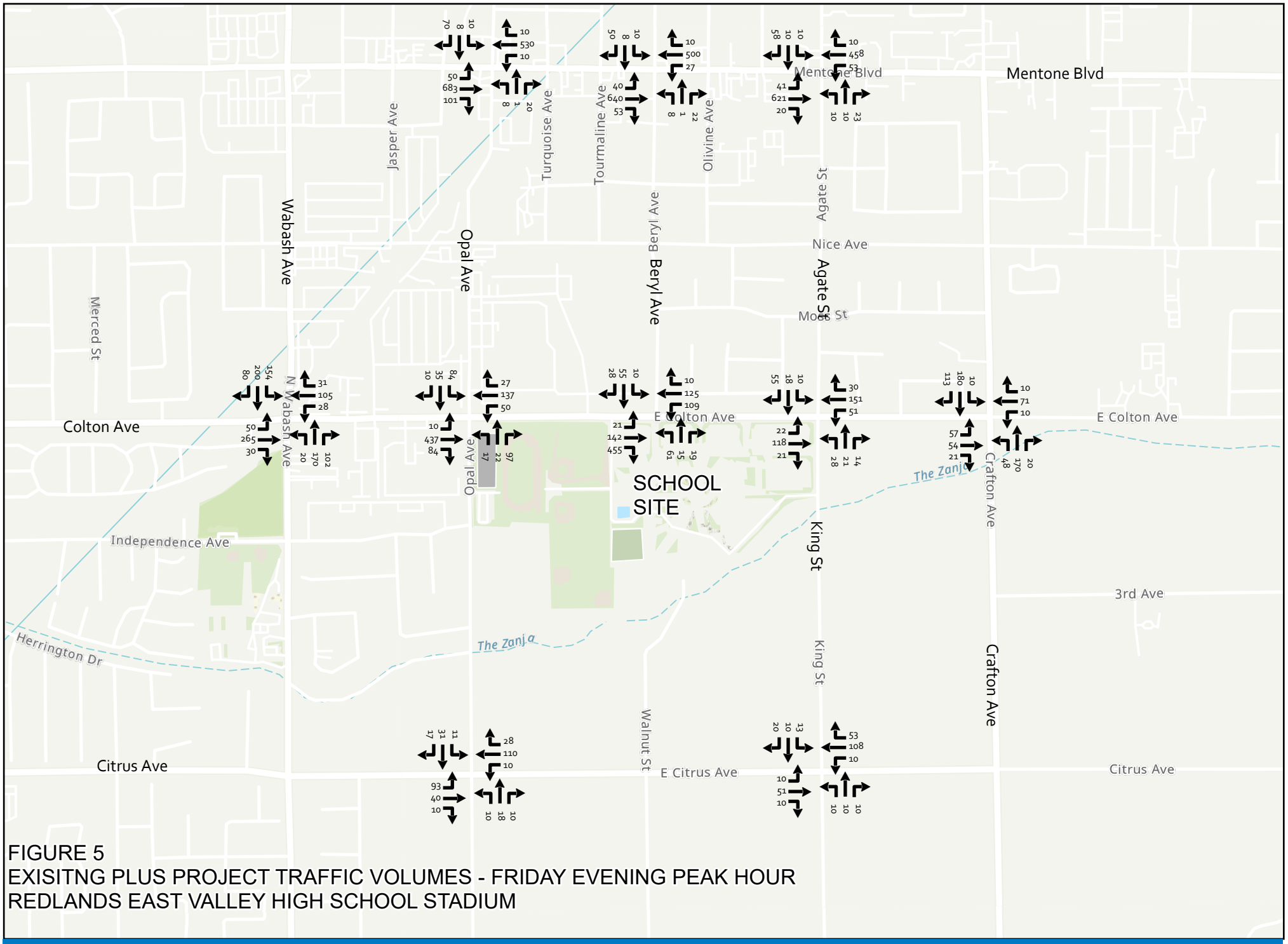


FIGURE 5
EXISITNG PLUS PROJECT TRAFFIC VOLUMES - FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

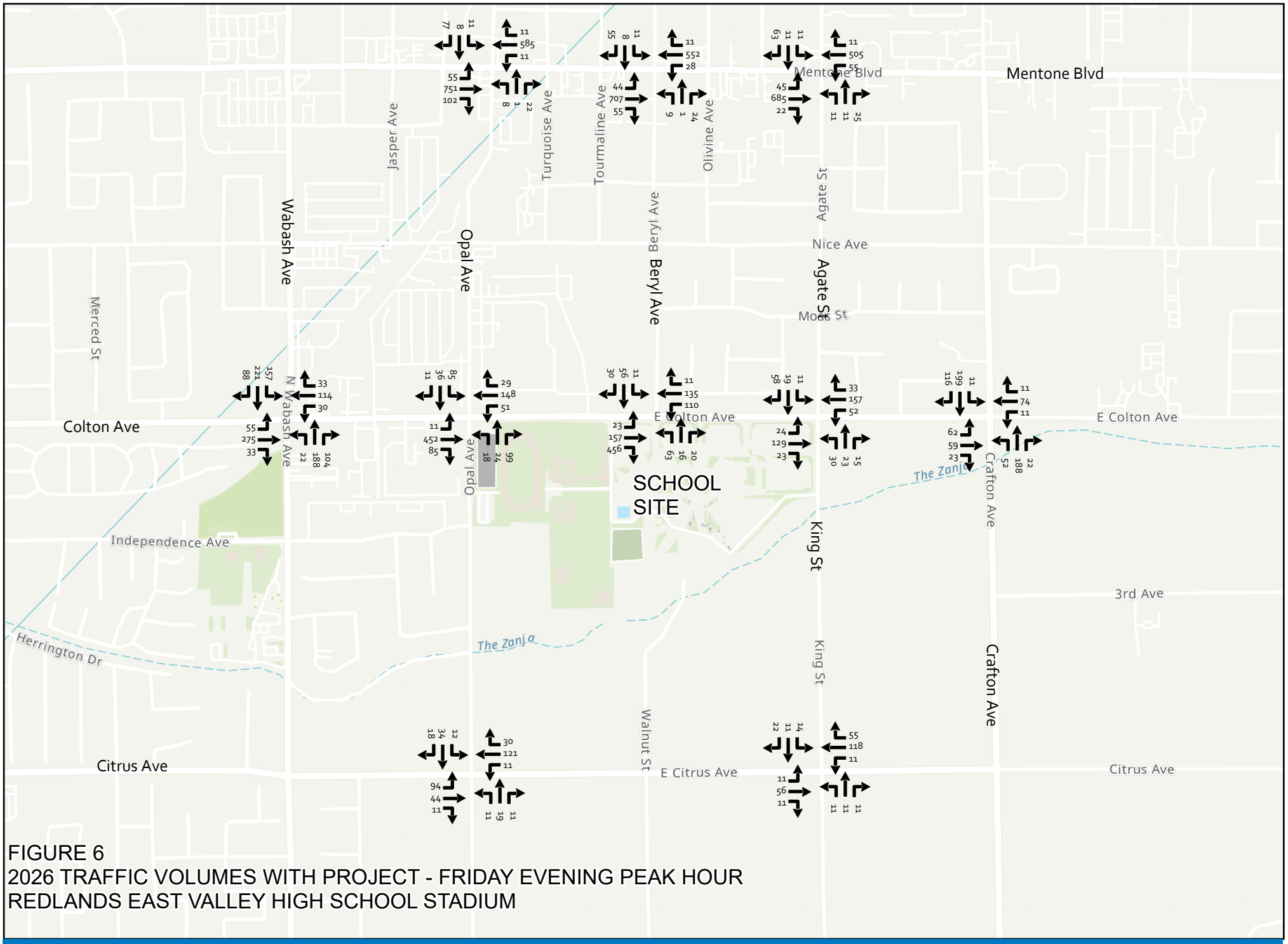


FIGURE 6
2026 TRAFFIC VOLUMES WITH PROJECT - FRIDAY EVENING PEAK HOUR
REDLANDS EAST VALLEY HIGH SCHOOL STADIUM

LEVEL OF SERVICE
CALCULATION SHEETS

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/King Street*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*50*	*10*	*10*	*100*	*20*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*10*	*10*	*10*	*20*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*10*	*62*	*10*	*126*	*30*		*41*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*1.0*	*0.0*	*0.3*		*0.2*	
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.2*	*0.3*		*0.5*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.1*	*0.5*	*-0.1*	*-0.1*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.01*	*0.06*	*0.01*	*0.11*	*0.03*		*0.04*	
hd, final value (s)	*5.26*	*4.65*	*5.22*	*4.60*	*4.29*		*4.15*	
x, final value	*0.01*	*0.08*	*0.01*	*0.16*	*0.04*		*0.05*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.3*	*2.9*	*2.3*	*2.3*		*2.2*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*260*	*312*	*260*	*376*	*280*		*291*	
Delay (s/veh)	*8.04*	*7.75*	*7.99*	*8.18*	*7.45*		*7.36*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*7.79*		*8.17*		*7.45*		*7.36*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.87*							
Intersection LOS	*A*							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/King Street*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* | North/South Street: *King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*51*	*10*	*10*	*108*	*53*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*10*	*13*	*10*	*20*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*10*	*63*	*10*	*168*	*30*		*44*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*1.0*	*0.0*	*0.3*		*0.3*	
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.3*	*0.3*		*0.5*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.1*	*0.5*	*-0.2*	*-0.1*		*-0.2*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.01*	*0.06*	*0.01*	*0.15*	*0.03*		*0.04*	
hd, final value (s)	*5.30*	*4.69*	*5.23*	*4.50*	*4.38*		*4.27*	
x, final value	*0.01*	*0.08*	*0.01*	*0.21*	*0.04*		*0.05*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.4*	*2.9*	*2.2*	*2.4*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*260*	*313*	*260*	*418*	*280*		*294*	
Delay (s/veh)	*8.08*	*7.81*	*8.01*	*8.39*	*7.55*		*7.51*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*7.85*		*8.37*		*7.55*		*7.51*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.06*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/King Street*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* | North/South Street: *King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*55*	*11*	*11*	*110*	*22*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*11*	*11*	*11*	*22*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*11*	*68*	*11*	*138*	*33*		*45*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*1.0*	*0.0*	*0.3*		*0.2*	
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.2*	*0.3*		*0.5*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.1*	*0.5*	*-0.1*	*-0.1*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.01*	*0.06*	*0.01*	*0.12*	*0.03*		*0.04*	
hd, final value (s)	*5.29*	*4.68*	*5.24*	*4.62*	*4.34*		*4.20*	
x, final value	*0.02*	*0.09*	*0.02*	*0.18*	*0.04*		*0.05*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.4*	*2.9*	*2.3*	*2.3*		*2.2*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*261*	*318*	*261*	*388*	*283*		*295*	
Delay (s/veh)	*8.08*	*7.83*	*8.03*	*8.32*	*7.52*		*7.44*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*7.87*		*8.30*		*7.52*		*7.44*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.97*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/King Street*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* | North/South Street: *King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*56*	*11*	*11*	*118*	*55*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*11*	*14*	*11*	*22*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*11*	*69*	*11*	*181*	*33*		*48*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*1.0*	*0.0*	*0.3*		*0.3*	
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.3*	*0.3*		*0.5*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.1*	*0.5*	*-0.2*	*-0.1*		*-0.2*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.01*	*0.06*	*0.01*	*0.16*	*0.03*		*0.04*	
hd, final value (s)	*5.33*	*4.72*	*5.26*	*4.53*	*4.44*		*4.33*	
x, final value	*0.02*	*0.09*	*0.02*	*0.23*	*0.04*		*0.06*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.4*	*3.0*	*2.2*	*2.4*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*261*	*319*	*261*	*431*	*283*		*298*	
Delay (s/veh)	*8.12*	*7.89*	*8.04*	*8.57*	*7.63*		*7.59*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*7.92*		*8.54*		*7.63*		*7.59*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.18*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*40*	*10*	*10*	*110*	*20*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*10*	*10*	*30*	*10*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.95*		*0.95*		*0.95*		*0.95*	
Flow Rate (veh/h)	*62*		*146*		*30*		*51*	
% Heavy Vehicles	*0*		*0*		*0*		*0*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*		*0.1*		*0.3*		*0.2*	
Prop. Right-Turns	*0.2*		*0.1*		*0.3*		*0.2*	
Prop. Heavy Vehicle	*0.0*		*0.0*		*0.0*		*0.0*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*-0.1*		*-0.1*		*-0.1*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.06*		*0.13*		*0.03*		*0.05*	
hd, final value (s)	*4.16*		*4.07*		*4.27*		*4.31*	
x, final value	*0.07*		*0.17*		*0.04*		*0.06*	
Move-up time, m (s)	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.2*		*2.1*		*2.3*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*312*		*396*		*280*		*301*	
Delay (s/veh)	*7.49*		*7.88*		*7.43*		*7.58*	
LOS	*A*		*A*		*A*		*A*	
Approach: Delay (s/veh)	*7.49*		*7.88*		*7.43*		*7.58*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.70*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*93*	*40*	*10*	*10*	*110*	*28*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*18*	*10*	*11*	*31*	*17*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.95*		*0.95*		*0.95*		*0.95*	
Flow Rate (veh/h)	*149*		*154*		*38*		*60*	
% Heavy Vehicles	*0*		*0*		*0*		*0*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.7*		*0.1*		*0.3*		*0.2*	
Prop. Right-Turns	*0.1*		*0.2*		*0.3*		*0.3*	
Prop. Heavy Vehicle	*0.0*		*0.0*		*0.0*		*0.0*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*		*-0.1*		*-0.1*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.13*		*0.14*		*0.03*		*0.05*	
hd, final value (s)	*4.38*		*4.20*		*4.55*		*4.49*	
x, final value	*0.18*		*0.18*		*0.05*		*0.07*	
Move-up time, m (s)	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.4*		*2.2*		*2.5*		*2.5*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*399*		*404*		*288*		*310*	
Delay (s/veh)	*8.35*		*8.11*		*7.78*		*7.86*	
LOS	*A*		*A*		*A*		*A*	
Approach: Delay (s/veh)	*8.35*		*8.11*		*7.78*		*7.86*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.13*							
Intersection LOS	*A*							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*44*	*11*	*11*	*121*	*22*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*11*	*11*	*33*	*11*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.95*		*0.95*		*0.95*		*0.95*	
Flow Rate (veh/h)	*68*		*161*		*33*		*56*	
% Heavy Vehicles	*0*		*0*		*0*		*0*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*		*0.1*		*0.3*		*0.2*	
Prop. Right-Turns	*0.2*		*0.1*		*0.3*		*0.2*	
Prop. Heavy Vehicle	*0.0*		*0.0*		*0.0*		*0.0*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*-0.1*		*-0.1*		*-0.1*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.06*		*0.14*		*0.03*		*0.05*	
hd, final value (s)	*4.20*		*4.10*		*4.33*		*4.36*	
x, final value	*0.08*		*0.18*		*0.04*		*0.07*	
Move-up time, m (s)	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.2*		*2.1*		*2.3*		*2.4*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*318*		*411*		*283*		*306*	
Delay (s/veh)	*7.56*		*8.02*		*7.51*		*7.68*	
LOS	*A*		*A*		*A*		*A*	
Approach: Delay (s/veh)	*7.56*		*8.02*		*7.51*		*7.68*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.81*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Citrus Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Citrus Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*94*	*44*	*11*	*11*	*121*	*30*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*19*	*11*	*12*	*34*	*18*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.95*		*0.95*		*0.95*		*0.95*	
Flow Rate (veh/h)	*155*		*169*		*42*		*65*	
% Heavy Vehicles	*0*		*0*		*0*		*0*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.6*		*0.1*		*0.3*		*0.2*	
Prop. Right-Turns	*0.1*		*0.2*		*0.3*		*0.3*	
Prop. Heavy Vehicle	*0.0*		*0.0*		*0.0*		*0.0*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*		*-0.1*		*-0.1*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.14*		*0.15*		*0.04*		*0.06*	
hd, final value (s)	*4.42*		*4.23*		*4.61*		*4.55*	
x, final value	*0.19*		*0.20*		*0.05*		*0.08*	
Move-up time, m (s)	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.4*		*2.2*		*2.6*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*405*		*419*		*292*		*315*	
Delay (s/veh)	*8.46*		*8.28*		*7.87*		*7.96*	
LOS	*A*		*A*		*A*		*A*	
Approach: Delay (s/veh)	*8.46*		*8.28*		*7.87*		*7.96*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.26*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Agate Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Agate Avenue/King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*110*	*20*	*10*	*60*	*30*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*20*	*10*	*10*	*10*	*30*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*78*	*78*	*41*	*62*	*52*		*51*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.2*	*0.0*	*0.4*		*0.2*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.5*	*0.2*		*0.6*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.2*	*0.1*	*-0.3*	*-0.0*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.07*	*0.07*	*0.04*	*0.06*	*0.05*		*0.05*	
hd, final value (s)	*4.96*	*4.64*	*4.99*	*4.52*	*4.51*		*4.22*	
x, final value	*0.11*	*0.10*	*0.06*	*0.08*	*0.07*		*0.06*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.7*	*2.3*	*2.7*	*2.2*	*2.5*		*2.2*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*328*	*328*	*291*	*312*	*302*		*301*	
Delay (s/veh)	*8.26*	*7.85*	*8.00*	*7.60*	*7.82*		*7.49*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.06*		*7.76*		*7.82*		*7.49*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.86*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Agate Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Agate Avenue/King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*118*	*21*	*51*	*151*	*30*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*28*	*21*	*14*	*10*	*18*	*55*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*85*	*84*	*131*	*111*	*65*		*85*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.4*	*0.0*	*0.4*		*0.1*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.3*	*0.2*		*0.7*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.2*	*0.2*	*-0.2*	*-0.0*		*-0.4*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.07*	*0.12*	*0.10*	*0.06*		*0.08*	
hd, final value (s)	*5.25*	*4.93*	*5.24*	*4.84*	*4.92*		*4.56*	
x, final value	*0.12*	*0.11*	*0.19*	*0.15*	*0.09*		*0.11*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.9*	*2.6*	*2.9*	*2.5*	*2.9*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*335*	*334*	*381*	*361*	*315*		*335*	
Delay (s/veh)	*8.69*	*8.27*	*9.18*	*8.39*	*8.39*		*8.10*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.48*		*8.82*		*8.39*		*8.10*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.56*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Agate Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Agate Avenue/King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*121*	*22*	*11*	*66*	*33*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*22*	*11*	*11*	*11*	*33*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*86*	*87*	*45*	*68*	*57*		*56*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.2*	*0.0*	*0.4*		*0.2*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.5*	*0.2*		*0.6*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.2*	*0.1*	*-0.3*	*-0.0*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.08*	*0.04*	*0.06*	*0.05*		*0.05*	
hd, final value (s)	*5.00*	*4.68*	*5.04*	*4.57*	*4.57*		*4.29*	
x, final value	*0.12*	*0.11*	*0.06*	*0.09*	*0.07*		*0.07*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.7*	*2.4*	*2.7*	*2.3*	*2.6*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*336*	*337*	*295*	*318*	*307*		*306*	
Delay (s/veh)	*8.37*	*7.97*	*8.08*	*7.70*	*7.93*		*7.60*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.17*		*7.85*		*7.93*		*7.60*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.97*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Agate Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Agate Avenue/King Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*24*	*129*	*23*	*52*	*157*	*33*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*30*	*23*	*15*	*11*	*19*	*58*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*92*	*92*	*136*	*117*	*70*		*92*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.4*	*0.0*	*0.4*		*0.1*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.3*	*0.2*		*0.7*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.2*	*0.2*	*-0.2*	*-0.0*		*-0.4*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.08*	*0.12*	*0.10*	*0.06*		*0.08*	
hd, final value (s)	*5.30*	*4.98*	*5.30*	*4.89*	*4.99*		*4.63*	
x, final value	*0.14*	*0.13*	*0.20*	*0.16*	*0.10*		*0.12*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.0*	*2.7*	*3.0*	*2.6*	*3.0*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*342*	*342*	*386*	*367*	*320*		*342*	
Delay (s/veh)	*8.83*	*8.41*	*9.32*	*8.51*	*8.53*		*8.25*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.62*		*8.95*		*8.53*		*8.25*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.69*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Beryl Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Beryl Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*140*	*10*	*10*	*100*	*10*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*10*	*10*	*10*	*5*	*20*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*94*	*83*	*62*	*62*	*41*		*36*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*	*0.0*	*0.2*	*0.0*	*0.5*		*0.3*	
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.2*	*0.2*		*0.6*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.1*	*-0.1*	*-0.0*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.07*	*0.06*	*0.06*	*0.04*		*0.03*	
hd, final value (s)	*4.90*	*4.70*	*4.91*	*4.72*	*4.57*		*4.33*	
x, final value	*0.13*	*0.11*	*0.08*	*0.08*	*0.05*		*0.04*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.6*	*2.4*	*2.6*	*2.4*	*2.6*		*2.3*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*344*	*333*	*312*	*312*	*291*		*286*	
Delay (s/veh)	*8.31*	*7.97*	*8.06*	*7.83*	*7.83*		*7.53*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.15*		*7.95*		*7.83*		*7.53*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.99*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Beryl Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Beryl Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*21*	*142*	*455*	*109*	*125*	*10*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*61*	*15*	*19*	*10*	*55*	*28*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*96*	*552*	*179*	*76*	*99*		*96*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*	*0.0*	*0.6*	*0.0*	*0.6*		*0.1*	
Prop. Right-Turns	*0.0*	*0.9*	*0.0*	*0.1*	*0.2*		*0.3*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.6*	*0.3*	*-0.1*	*0.0*		*-0.2*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.09*	*0.49*	*0.16*	*0.07*	*0.09*		*0.09*	
hd, final value (s)	*5.57*	*4.84*	*6.13*	*5.72*	*6.12*		*5.97*	
x, final value	*0.15*	*0.74*	*0.31*	*0.12*	*0.17*		*0.16*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.3*	*2.5*	*3.8*	*3.4*	*4.1*		*4.0*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*346*	*734*	*429*	*326*	*349*		*346*	
Delay (s/veh)	*9.24*	*20.13*	*11.51*	*9.20*	*10.36*		*10.09*	
LOS	*A*	*C*	*B*	*A*	*B*		*B*	
Approach: Delay (s/veh)	*18.52*		*10.82*		*10.36*		*10.09*	
LOS	*C*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*15.26*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Beryl Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Beryl Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*155*	*11*	*11*	*110*	*11*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*11*	*11*	*11*	*6*	*22*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*104*	*93*	*68*	*68*	*45*		*40*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*	*0.0*	*0.2*	*0.0*	*0.5*		*0.3*	
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.2*	*0.2*		*0.6*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.1*	*-0.1*	*-0.0*		*-0.3*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.09*	*0.08*	*0.06*	*0.06*	*0.04*		*0.04*	
hd, final value (s)	*4.93*	*4.74*	*4.95*	*4.76*	*4.65*		*4.42*	
x, final value	*0.14*	*0.12*	*0.09*	*0.09*	*0.06*		*0.05*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.6*	*2.4*	*2.7*	*2.5*	*2.7*		*2.4*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*354*	*343*	*318*	*318*	*295*		*290*	
Delay (s/veh)	*8.45*	*8.10*	*8.16*	*7.93*	*7.94*		*7.64*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.28*		*8.04*		*7.94*		*7.64*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.11*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Beryl Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Beryl Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*23*	*157*	*456*	*110*	*135*	*11*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*63*	*16*	*20*	*11*	*56*	*30*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*106*	*563*	*185*	*82*	*103*		*100*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*	*0.0*	*0.6*	*0.0*	*0.6*		*0.1*	
Prop. Right-Turns	*0.0*	*0.9*	*0.0*	*0.1*	*0.2*		*0.3*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.6*	*0.3*	*-0.1*	*0.0*		*-0.2*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.09*	*0.50*	*0.16*	*0.07*	*0.09*		*0.09*	
hd, final value (s)	*5.63*	*4.91*	*6.21*	*5.80*	*6.21*		*6.06*	
x, final value	*0.17*	*0.77*	*0.32*	*0.13*	*0.18*		*0.17*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.3*	*2.6*	*3.9*	*3.5*	*4.2*		*4.1*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*356*	*725*	*435*	*332*	*353*		*350*	
Delay (s/veh)	*9.44*	*21.90*	*11.78*	*9.38*	*10.55*		*10.28*	
LOS	*A*	*C*	*B*	*A*	*B*		*B*	
Approach: Delay (s/veh)	*19.93*		*11.05*		*10.55*		*10.28*	
LOS	*C*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*16.15*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Crafton Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Crafton Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*50*	*50*	*20*	*10*	*30*	*10*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*40*	*170*	*20*	*10*	*180*	*30*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*LT*	*TR*	*LTR*		*LT*	*R*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	*0.95*
Flow Rate (veh/h)	*52*	*73*	*25*	*25*	*241*		*199*	31
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	*0*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.4*	*0.0*	*0.2*		*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.4*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.2*	*0.2*	*-0.3*	*-0.0*		*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.05*	*0.06*	*0.02*	*0.02*	*0.21*		*0.18*	*0.03*
hd, final value (s)	*6.30*	*5.59*	*6.12*	*5.63*	*5.26*		*5.28*	*4.55*
x, final value	*0.09*	*0.11*	*0.04*	*0.04*	*0.35*		*0.29*	*0.04*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.0*	*3.3*	*3.8*	*3.3*	*3.0*		*3.0*	*2.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*302*	*323*	*275*	*275*	*491*		*449*	*281*
Delay (s/veh)	*9.63*	*9.00*	*9.09*	*8.56*	*10.80*		*10.13*	*7.44*
LOS	*A*	*A*	*A*	*A*	*B*		*B*	*A*
Approach: Delay (s/veh)	*9.26*		*8.82*		*10.80*		*9.77*	
LOS	*A*		*A*		*B*		*A*	
Intersection Delay (s/veh)	*9.98*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Crafton Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Crafton Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*57*	*54*	*21*	*10*	*71*	*10*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*48*	*170*	*20*	*10*	*180*	*113*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*LT*	*TR*	*LTR*		*LT*	*R*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	*0.95*
Flow Rate (veh/h)	*60*	*78*	*46*	*47*	*249*		*199*	118
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	*0*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.2*	*0.0*	*0.2*		*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.2*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.2*	*0.1*	*-0.1*	*-0.0*		*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.05*	*0.07*	*0.04*	*0.04*	*0.22*		*0.18*	*0.10*
hd, final value (s)	*6.62*	*5.91*	*6.30*	*6.04*	*5.55*		*5.51*	*4.78*
x, final value	*0.11*	*0.13*	*0.08*	*0.08*	*0.38*		*0.30*	*0.16*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.3*	*3.6*	*4.0*	*3.7*	*3.2*		*3.2*	*2.5*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*310*	*328*	*296*	*297*	*499*		*449*	*368*
Delay (s/veh)	*10.13*	*9.48*	*9.55*	*9.26*	*11.66*		*10.61*	*8.37*
LOS	*B*	*A*	*A*	*A*	*B*		*B*	*A*
Approach: Delay (s/veh)	*9.76*		*9.41*		*11.66*		*9.77*	
LOS	*A*		*A*		*B*		*A*	
Intersection Delay (s/veh)	*10.32*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Crafton Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Crafton Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*55*	*55*	*22*	*11*	*33*	*11*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*44*	*188*	*22*	*11*	*199*	*33*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*LT*	*TR*	*LTR*		*LT*	*R*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	*0.95*
Flow Rate (veh/h)	*57*	*80*	*27*	*28*	*266*		*220*	*34*
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	*0*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.4*	*0.0*	*0.2*		*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.4*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.2*	*0.2*	*-0.3*	*-0.0*		*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.05*	*0.07*	*0.02*	*0.02*	*0.24*		*0.20*	*0.03*
hd, final value (s)	*6.45*	*5.75*	*6.30*	*5.81*	*5.36*		*5.38*	*4.65*
x, final value	*0.10*	*0.13*	*0.05*	*0.05*	*0.40*		*0.33*	*0.04*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.2*	*3.4*	*4.0*	*3.5*	*3.1*		*3.1*	*2.4*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*307*	*330*	*277*	*278*	*516*		*470*	*284*
Delay (s/veh)	*9.89*	*9.28*	*9.31*	*8.79*	*11.53*		*10.69*	*7.56*
LOS	*A*	*A*	*A*	*A*	*B*		*B*	*A*
Approach: Delay (s/veh)	*9.53*		*9.04*		*11.53*		*10.27*	
LOS	*A*		*A*		*B*		*B*	
Intersection Delay (s/veh)	*10.50*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Crafton Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Crafton Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*62*	*59*	*23*	*11*	*74*	*11*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*52*	*188*	*22*	*11*	*199*	*116*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*LT*	*TR*	*LTR*		*LT*	*R*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	*0.95*
Flow Rate (veh/h)	*65*	*86*	*49*	*49*	*274*		*220*	*122*
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	*0*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.2*	*0.0*	*0.2*		*0.1*	*0.0*
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.2*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.5*	*-0.2*	*0.1*	*-0.2*	*-0.0*		*0.0*	*-0.7*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.06*	*0.08*	*0.04*	*0.04*	*0.24*		*0.20*	*0.11*
hd, final value (s)	*6.78*	*6.08*	*6.50*	*6.22*	*5.66*		*5.63*	*4.90*
x, final value	*0.12*	*0.15*	*0.09*	*0.08*	*0.43*		*0.34*	*0.17*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.5*	*3.8*	*4.2*	*3.9*	*3.4*		*3.3*	*2.6*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*315*	*336*	*299*	*299*	*524*		*470*	*372*
Delay (s/veh)	*10.43*	*9.81*	*9.82*	*9.50*	*12.57*		*11.25*	*8.57*
LOS	*B*	*A*	*A*	*A*	*B*		*B*	*A*
Approach: Delay (s/veh)	*10.08*		*9.66*		*12.57*		*10.29*	
LOS	*B*		*A*		*B*		*B*	
Intersection Delay (s/veh)	*10.91*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*140*	*10*	*10*	*110*	*20*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*20*	*20*	*10*	*10*	*10*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*83*	*83*	*67*	*78*	*52*		*30*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*	*0.0*	*0.1*	*0.0*	*0.2*		*0.3*	
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.3*	*0.4*		*0.3*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.1*	*-0.2*	*-0.2*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.07*	*0.07*	*0.06*	*0.07*	*0.05*		*0.03*	
hd, final value (s)	*4.87*	*4.73*	*4.91*	*4.64*	*4.43*		*4.52*	
x, final value	*0.11*	*0.11*	*0.09*	*0.10*	*0.06*		*0.04*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.6*	*2.4*	*2.6*	*2.3*	*2.4*		*2.5*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*333*	*333*	*317*	*328*	*302*		*280*	
Delay (s/veh)	*8.19*	*8.01*	*8.10*	*7.86*	*7.73*		*7.70*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.10*		*7.97*		*7.73*		*7.70*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*7.97*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*437*	*84*	*50*	*137*	*27*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*17*	*22*	*97*	*84*	*35*	*10*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*239*	*318*	*123*	*100*	*142*		*134*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*	*0.0*	*0.4*	*0.0*	*0.1*		*0.7*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.3*	*0.7*		*0.1*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.0*	*-0.2*	*0.2*	*-0.2*	*-0.4*		*0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.21*	*0.28*	*0.11*	*0.09*	*0.13*		*0.12*	
hd, final value (s)	*5.68*	*5.46*	*6.27*	*5.86*	*5.55*		*6.04*	
x, final value	*0.38*	*0.48*	*0.21*	*0.16*	*0.22*		*0.22*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.4*	*3.2*	*4.0*	*3.6*	*3.6*		*4.0*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*489*	*568*	*373*	*350*	*392*		*384*	
Delay (s/veh)	*11.78*	*13.15*	*10.68*	*9.70*	*10.10*		*10.78*	
LOS	*B*	*B*	*B*	*A*	*B*		*B*	
Approach: Delay (s/veh)	*12.56*		*10.24*		*10.10*		*10.78*	
LOS	*B*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*11.51*							
Intersection LOS	*B*							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*155*	*11*	*11*	*121*	*22*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*22*	*22*	*11*	*11*	*11*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*92*	*93*	*74*	*87*	*57*		*33*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*	*0.0*	*0.1*	*0.0*	*0.2*		*0.3*	
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.3*	*0.4*		*0.3*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.1*	*-0.2*	*-0.2*		*-0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.08*	*0.08*	*0.07*	*0.08*	*0.05*		*0.03*	
hd, final value (s)	*4.91*	*4.77*	*4.95*	*4.69*	*4.51*		*4.61*	
x, final value	*0.13*	*0.12*	*0.10*	*0.11*	*0.07*		*0.04*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*2.6*	*2.5*	*2.6*	*2.4*	*2.5*		*2.6*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*342*	*343*	*324*	*337*	*307*		*283*	
Delay (s/veh)	*8.32*	*8.14*	*8.21*	*7.99*	*7.86*		*7.81*	
LOS	*A*	*A*	*A*	*A*	*A*		*A*	
Approach: Delay (s/veh)	*8.23*		*8.09*		*7.86*		*7.81*	
LOS	*A*		*A*		*A*		*A*	
Intersection Delay (s/veh)	*8.10*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Opal Avenue*
Jurisdiction	*San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Opal Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*11*	*452*	*85*	*51*	*148*	*29*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*18*	*24*	*99*	*85*	*36*	*11*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LTR*		*LTR*	
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*		*0.95*	
Flow Rate (veh/h)	*248*	*326*	*130*	*107*	*147*		*137*	
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*		*0*	
No. Lanes	*2*		*2*		*1*		*1*	
Geometry Group	*5*		*5*		*2*		*2*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*	*0.0*	*0.4*	*0.0*	*0.1*		*0.6*	
Prop. Right-Turns	*0.0*	*0.3*	*0.0*	*0.3*	*0.7*		*0.1*	
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.0*	*-0.2*	*0.2*	*-0.2*	*-0.4*		*0.1*	

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	
x, initial	*0.22*	*0.29*	*0.12*	*0.10*	*0.13*		*0.12*	
hd, final value (s)	*5.75*	*5.53*	*6.34*	*5.94*	*5.64*		*6.12*	
x, final value	*0.40*	*0.50*	*0.23*	*0.18*	*0.23*		*0.23*	
Move-up time, m (s)	*2.3*		*2.3*		*2.0*		*2.0*	
Service Time, t_s (s)	*3.4*	*3.2*	*4.0*	*3.6*	*3.6*		*4.1*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*498*	*576*	*380*	*357*	*397*		*387*	
Delay (s/veh)	*12.16*	*13.65*	*10.91*	*9.90*	*10.33*		*10.98*	
LOS	*B*	*B*	*B*	*A*	*B*		*B*	
Approach: Delay (s/veh)	*13.01*		*10.46*		*10.33*		*10.98*	
LOS	*B*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*11.84*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Wabash Avenue*
Jurisdiction	*Redlands/San Bernardino Co*
Analysis Year	*2021 Existing*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Wabash Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*50*	*100*	*30*	*20*	*90*	*20*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*170*	*20*	*30*	*200*	*80*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Flow Rate (veh/h)	*104*	*83*	*68*	*68*	*110*	*110*	*136*	189
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*2*		*2*		*2*		*2*	
Geometry Group	*5*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.5*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.2*	*0.0*
Prop. Right-Turns	*0.0*	*0.4*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.4*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.3*	*-0.3*	*0.2*	*-0.2*	*0.1*	*-0.1*	*0.1*	*-0.3*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.09*	*0.07*	*0.06*	*0.06*	*0.10*	*0.10*	*0.12*	*0.17*
hd, final value (s)	*6.31*	*5.80*	*6.29*	*5.92*	*5.91*	*5.68*	*5.81*	*5.38*
x, final value	*0.18*	*0.13*	*0.12*	*0.11*	*0.18*	*0.17*	*0.22*	*0.28*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.0*	*3.5*	*4.0*	*3.6*	*3.6*	*3.4*	*3.5*	*3.1*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*354*	*333*	*318*	*318*	*360*	*360*	*386*	*439*
Delay (s/veh)	*10.42*	*9.40*	*9.84*	*9.37*	*9.90*	*9.56*	*10.13*	*10.19*
LOS	*B*	*A*	*A*	*A*	*A*	*A*	*B*	*B*
Approach: Delay (s/veh)	*9.97*		*9.61*		*9.73*		*10.17*	
LOS	*A*		*A*		*A*		*B*	
Intersection Delay (s/veh)	*9.92*							
Intersection LOS	*A*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Wabash Avenue*
Jurisdiction	*Redlands/San Bernardino Co*
Analysis Year	*2021 Existing Plus Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* | North/South Street: *Wabash Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*50*	*265*	*30*	*28*	*105*	*31*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*20*	*170*	*102*	*154*	*200*	*80*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Flow Rate (veh/h)	*190*	*171*	*83*	*87*	*110*	*196*	*267*	189
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*2*		*2*		*2*		*2*	
Geometry Group	*5*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.6*	*0.0*
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.4*	*0.0*	*0.5*	*0.0*	*0.4*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.2*	*-0.3*	*0.1*	*-0.4*	*0.3*	*-0.3*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.17*	*0.15*	*0.07*	*0.08*	*0.10*	*0.17*	*0.24*	*0.17*
hd, final value (s)	*7.02*	*6.76*	*7.40*	*6.97*	*6.93*	*6.46*	*6.91*	*6.29*
x, final value	*0.37*	*0.32*	*0.17*	*0.17*	*0.21*	*0.35*	*0.51*	*0.33*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.7*	*4.5*	*5.1*	*4.7*	*4.6*	*4.2*	*4.6*	*4.0*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*440*	*421*	*333*	*337*	*360*	*446*	*508*	*439*
Delay (s/veh)	*13.80*	*12.63*	*11.62*	*11.08*	*11.49*	*12.61*	*16.64*	*12.07*
LOS	*B*	*B*	*B*	*B*	*B*	*B*	*C*	*B*
Approach: Delay (s/veh)	*13.25*		*11.34*		*12.21*		*14.74*	
LOS	*B*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*13.28*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Wabash Avenue*
Jurisdiction	*Redlands/San Bernardino Co*
Analysis Year	*2026 Without Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Wabash Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*55*	*110*	*33*	*22*	*99*	*22*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*188*	*22*	*33*	*221*	*88*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Flow Rate (veh/h)	*114*	*91*	*74*	*75*	*121*	*121*	*149*	208
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*2*		*2*		*2*		*2*	
Geometry Group	*5*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.5*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.2*	*0.0*
Prop. Right-Turns	*0.0*	*0.4*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.4*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.3*	*-0.3*	*0.2*	*-0.2*	*0.1*	*-0.1*	*0.1*	*-0.3*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.10*	*0.08*	*0.07*	*0.07*	*0.11*	*0.11*	*0.13*	*0.18*
hd, final value (s)	*6.50*	*5.99*	*6.49*	*6.12*	*6.07*	*5.85*	*5.96*	*5.54*
x, final value	*0.21*	*0.15*	*0.13*	*0.13*	*0.20*	*0.20*	*0.25*	*0.32*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.2*	*3.7*	*4.2*	*3.8*	*3.8*	*3.5*	*3.7*	*3.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*364*	*341*	*324*	*325*	*371*	*371*	*399*	*458*
Delay (s/veh)	*10.87*	*9.75*	*10.19*	*9.71*	*10.33*	*9.97*	*10.60*	*10.82*
LOS	*B*	*A*	*B*	*A*	*B*	*A*	*B*	*B*
Approach: Delay (s/veh)	*10.37*		*9.95*		*10.15*		*10.73*	
LOS	*B*		*A*		*B*		*B*	
Intersection Delay (s/veh)	*10.38*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Colton Avenue/Wabash Avenue*
Jurisdiction	*Redlands/San Bernardino Co*
Analysis Year	*2026 With Project*

Project ID *Redlands East Valley HS Stadium*

East/West Street: *Colton Avenue* North/South Street: *Wabash Avenue*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*55*	*275*	*33*	*30*	*114*	*33*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*22*	*188*	*104*	*157*	*221*	*88*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*	*LT*	*TR*
PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Flow Rate (veh/h)	*201*	*179*	*91*	*94*	*121*	*207*	*280*	208
% Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*2*		*2*		*2*		*2*	
Geometry Group	*5*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*	*0.0*	*0.3*	*0.0*	*0.2*	*0.0*	*0.6*	*0.0*
Prop. Right-Turns	*0.0*	*0.2*	*0.0*	*0.4*	*0.0*	*0.5*	*0.0*	*0.4*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*	*-0.1*	*0.2*	*-0.3*	*0.1*	*-0.4*	*0.3*	*-0.3*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.18*	*0.16*	*0.08*	*0.08*	*0.11*	*0.18*	*0.25*	*0.18*
hd, final value (s)	*7.24*	*6.96*	*7.62*	*7.20*	*7.14*	*6.68*	*7.09*	*6.49*
x, final value	*0.40*	*0.35*	*0.19*	*0.19*	*0.24*	*0.38*	*0.55*	*0.37*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.9*	*4.7*	*5.3*	*4.9*	*4.8*	*4.4*	*4.8*	*4.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*451*	*429*	*341*	*344*	*371*	*457*	*496*	*458*
Delay (s/veh)	*14.75*	*13.30*	*12.13*	*11.56*	*12.09*	*13.48*	*18.16*	*13.02*
LOS	*B*	*B*	*B*	*B*	*B*	*B*	*C*	*B*
Approach: Delay (s/veh)	*14.07*		*11.84*		*12.97*		*15.97*	
LOS	*B*		*B*		*B*		*C*	
Intersection Delay (s/veh)	*14.18*							
Intersection LOS	*B*							

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*R Garland*	Intersection	*Mentone Blvd/Agate Ave*
Agency/Co.	*Redlands USD*	Jurisdiction	*Caltrans*
Date Performed	*12/14/2021*	Analysis Year	*Existing 2021*
Analysis Time Period	*Friday Evening Peak Hour*		

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Agate Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*40*	*620*	*20*	*20*	*450*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*42*	*652*	*21*	*21*	*473*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*20*	*10*	*10*	*50*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*10*	*10*	*21*	*10*	*10*	*52*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*0*	*1*	*0*
Configuration	*LT*		*R*		*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*	*LT*		*R*		*LTR*	
v (veh/h)	*42*	*21*	*20*		*21*		*72*	
C (m) (veh/h)	*1090*	*927*	*134*		*465*		*311*	
v/c	*0.04*	*0.02*	*0.15*		*0.05*		*0.23*	
95% queue length	*0.12*	*0.07*	*0.51*		*0.14*		*0.88*	
Control Delay (s/veh)	*8.4*	*9.0*	*36.5*		*13.1*		*20.0*	
LOS	*A*	*A*	*E*		*B*		*C*	
Approach Delay (s/veh)	--	--	*24.5*			*20.0*		
Approach LOS	--	--	*C*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*R Garland*	Intersection	*Mentone Blvd/Agate Ave*
Agency/Co.	*Redlands USD*	Jurisdiction	*Caltrans*
Date Performed	*12/14/2021*	Analysis Year	*Existing Plus Project*
Analysis Time Period	*Friday Evening Peak Hour*		

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Agate Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*41*	*621*	*20*	*53*	*458*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*43*	*653*	*21*	*55*	*482*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*10*	*10*	*23*	*10*	*10*	*58*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*10*	*10*	*24*	*10*	*10*	*61*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*0*	*1*	*0*
Configuration	*LT*		*R*		*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*	*LT*		*R*		*LTR*	
v (veh/h)	*43*	*55*	*20*		*24*		*81*	
C (m) (veh/h)	*1082*	*927*	*113*		*464*		*296*	
v/c	*0.04*	*0.06*	*0.18*		*0.05*		*0.27*	
95% queue length	*0.12*	*0.19*	*0.61*		*0.16*		*1.09*	
Control Delay (s/veh)	*8.5*	*9.1*	*43.6*		*13.2*		*21.7*	
LOS	*A*	*A*	*E*		*B*		*C*	
Approach Delay (s/veh)	--	--	*27.0*			*21.7*		
Approach LOS	--	--	*D*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Agate Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2026 Without Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Agate Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*44*	*684*	*22*	*22*	*497*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*46*	*720*	*23*	*23*	*523*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*22*	*11*	*11*	*55*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*11*	*11*	*23*	*11*	*11*	*57*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*0*	*1*	*0*
Configuration	*LT*		*R*		*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*	*LT*		*R*		*LTR*	
v (veh/h)	*46*	*23*	*22*		*23*		*79*	
C (m) (veh/h)	*1044*	*873*	*107*		*424*		*263*	
v/c	*0.04*	*0.03*	*0.21*		*0.05*		*0.30*	
95% queue length	*0.14*	*0.08*	*0.73*		*0.17*		*1.22*	
Control Delay (s/veh)	*8.6*	*9.2*	*47.2*		*14.0*		*24.5*	
LOS	*A*	*A*	*E*		*B*		*C*	
Approach Delay (s/veh)	--	--	*30.2*			*24.5*		
Approach LOS	--	--	*D*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Agate Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2026 With Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Agate Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*45*	*685*	*22*	*55*	*505*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*47*	*721*	*23*	*57*	*531*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*11*	*11*	*25*	*11*	*11*	*63*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*11*	*11*	*26*	*11*	*11*	*66*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*0*	*1*	*0*
Configuration	*LT*		*R*		*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*	*LT*		*R*		*LTR*	
v (veh/h)	*47*	*57*	*22*		*26*		*88*	
C (m) (veh/h)	*1037*	*873*	*89*		*424*		*248*	
v/c	*0.05*	*0.07*	*0.25*		*0.06*		*0.35*	
95% queue length	*0.14*	*0.21*	*0.89*		*0.20*		*1.53*	
Control Delay (s/veh)	*8.6*	*9.4*	*58.2*		*14.0*		*27.3*	
LOS	*A*	*A*	*F*		*B*		*D*	
Approach Delay (s/veh)	--	--	*34.3*			*27.3*		
Approach LOS	--	--	*D*			*D*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Beryl Ave*
Jurisdiction	*Caltrans*
Analysis Year	*Existing 2021*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Beryl Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*40*	*640*	*20*	*10*	*500*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*42*	*673*	*21*	*10*	*526*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*5*	*0*	*20*	*10*	*0*	*50*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*5*	*0*	*21*	*10*	*0*	*52*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*42*	*10*		*26*			*62*	
C (m) (veh/h)	*1042*	*911*		*287*			*352*	
v/c	*0.04*	*0.01*		*0.09*			*0.18*	
95% queue length	*0.13*	*0.03*		*0.30*			*0.63*	
Control Delay (s/veh)	*8.6*	*9.0*		*18.8*			*17.4*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay (s/veh)	--	--	*18.8*			*17.4*		
Approach LOS	--	--	*C*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Beryl Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2021 Existing plus Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Beryl Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*40*	*640*	*53*	*27*	*500*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*42*	*673*	*55*	*28*	*526*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*1*	*22*	*10*	*8*	*50*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*8*	*1*	*23*	*10*	*8*	*52*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*42*	*28*		*32*			*70*	
C (m) (veh/h)	*1042*	*885*		*226*			*284*	
v/c	*0.04*	*0.03*		*0.14*			*0.25*	
95% queue length	*0.13*	*0.10*		*0.49*			*0.95*	
Control Delay (s/veh)	*8.6*	*9.2*		*23.5*			*21.8*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay (s/veh)	--	--	*23.5*			*21.8*		
Approach LOS	--	--	*C*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Beryl Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2026 Without Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Beryl Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*44*	*707*	*22*	*11*	*552*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*46*	*744*	*23*	*11*	*581*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*6*	*0*	*22*	*11*	*0*	*55*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*6*	*0*	*23*	*11*	*0*	*57*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*46*	*11*		*29*			*68*	
C (m) (veh/h)	*994*	*856*		*234*			*302*	
v/c	*0.05*	*0.01*		*0.12*			*0.23*	
95% queue length	*0.15*	*0.04*		*0.42*			*0.85*	
Control Delay (s/veh)	*8.8*	*9.3*		*22.5*			*20.4*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay (s/veh)	--	--	*22.5*			*20.4*		
Approach LOS	--	--	*C*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*R Garland*	Intersection	*Mentone Blvd/Beryl Ave*
Agency/Co.	*Redlands USD*	Jurisdiction	*Caltrans*
Date Performed	*12/14/2021*	Analysis Year	*2026 With Project*
Analysis Time Period	*Friday Evening Peak Hour*		

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Beryl Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*44*	*707*	*55*	*28*	*552*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*46*	*744*	*57*	*29*	*581*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*9*	*1*	*24*	*11*	*8*	*55*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*9*	*1*	*25*	*11*	*8*	*57*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*46*	*29*		*35*			*76*	
C (m) (veh/h)	*994*	*831*		*183*			*243*	
v/c	*0.05*	*0.03*		*0.19*			*0.31*	
95% queue length	*0.15*	*0.11*		*0.68*			*1.29*	
Control Delay (s/veh)	*8.8*	*9.5*		*29.3*			*26.4*	
LOS	*A*	*A*		*D*			*D*	
Approach Delay (s/veh)	--	--	*29.3*			*26.4*		
Approach LOS	--	--	*D*			*D*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Opal Ave*
Jurisdiction	*Caltrans*
Analysis Year	*Existing 2021*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Opal Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*50*	*650*	*10*	*10*	*530*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*52*	*684*	*10*	*10*	*557*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*20*	*10*	*0*	*70*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*21*	*10*	*0*	*73*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*52*	*10*		*21*			*83*	
C (m) (veh/h)	*1015*	*911*		*449*			*364*	
v/c	*0.05*	*0.01*		*0.05*			*0.23*	
95% queue length	*0.16*	*0.03*		*0.15*			*0.86*	
Control Delay (s/veh)	*8.7*	*9.0*		*13.4*			*17.8*	
LOS	*A*	*A*		*B*			*C*	
Approach Delay (s/veh)	--	--	*13.4*			*17.8*		
Approach LOS	--	--	*B*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Opal Ave*
Jurisdiction	*Caltrans*
Analysis Year	*Existing plus Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Opal Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*50*	*683*	*101*	*10*	*530*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*52*	*718*	*106*	*10*	*557*	*10*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*1*	*20*	*10*	*8*	*70*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*8*	*1*	*21*	*10*	*8*	*73*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*52*	*10*		*30*			*91*	
C (m) (veh/h)	*1015*	*815*		*186*			*292*	
v/c	*0.05*	*0.01*		*0.16*			*0.31*	
95% queue length	*0.16*	*0.04*		*0.56*			*1.29*	
Control Delay (s/veh)	*8.7*	*9.5*		*28.0*			*22.8*	
LOS	*A*	*A*		*D*			*C*	
Approach Delay (s/veh)	--	--	*28.0*			*22.8*		
Approach LOS	--	--	*D*			*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*R Garland*	Intersection	*Mentone Blvd/Opal Ave*
Agency/Co.	*Redlands USD*	Jurisdiction	*Caltrans*
Date Performed	*12/14/2021*	Analysis Year	*2026 Without Project*
Analysis Time Period	*Friday Evening Peak Hour*		

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Opal Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*55*	*718*	*11*	*11*	*585*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*57*	*755*	*11*	*11*	*615*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*22*	*11*	*0*	*77*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*23*	*11*	*0*	*81*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*57*	*11*		*23*			*92*	
C (m) (veh/h)	*965*	*856*		*409*			*316*	
v/c	*0.06*	*0.01*		*0.06*			*0.29*	
95% queue length	*0.19*	*0.04*		*0.18*			*1.18*	
Control Delay (s/veh)	*9.0*	*9.3*		*14.3*			*21.0*	
LOS	*A*	*A*		*B*			*C*	
Approach Delay (s/veh)	--	--	*14.3*			*21.0*		
Approach LOS	--	--	*B*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*R Garland*
Agency/Co.	*Redlands USD*
Date Performed	*12/14/2021*
Analysis Time Period	*Friday Evening Peak Hour*

Site Information

Intersection	*Mentone Blvd/Opal Ave*
Jurisdiction	*Caltrans*
Analysis Year	*2026 With Project*

Project Description *Redlands East Valley HS Stadium*

East/West Street: *Mentone Blvd* | North/South Street: *Opal Avenue*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*55*	*751*	*102*	*11*	*585*	*11*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*57*	*790*	*107*	*11*	*615*	*11*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*1*	*22*	*11*	*8*	*77*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*	*0.95*
Hourly Flow Rate, HFR (veh/h)	*8*	*1*	*23*	*11*	*8*	*81*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*57*	*11*		*32*			*100*	
C (m) (veh/h)	*965*	*765*		*153*			*251*	
v/c	*0.06*	*0.01*		*0.21*			*0.40*	
95% queue length	*0.19*	*0.04*		*0.76*			*1.81*	
Control Delay (s/veh)	*9.0*	*9.8*		*34.6*			*28.5*	
LOS	*A*	*A*		*D*			*D*	
Approach Delay (s/veh)	--	--	*34.6*			*28.5*		
Approach LOS	--	--	*D*			*D*		