# 4.0 ALTERNATIVES

## INTRODUCTION

*California Environmental Quality Act (CEQA) Guidelines* require an EIR to describe a range of reasonable alternatives to the project, or to the location of the project, "which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project," and to "evaluate the comparable merits of the alternatives."[1]The analysis of alternatives shall focus on alternatives "which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of project objectives, or would be more costly."[2]

The selection and discussion of alternatives is intended to foster meaningful public participation and informed decision making. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. The *State CEQA Guidelines* also require the analysis of a no project alternative, and the identification of the environmentally superior alternative. Where the environmentally superior alternative is the no project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."[3]

In addition, the *State CEQA Guidelines* require an EIR to identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination.[4]

Accordingly, several alternatives that might avoid or substantially lessen project impacts were considered. Some alternatives were initially considered but rejected as infeasible. These are briefly discussed below. Three alternatives were selected for further analysis, as detailed below.

Case law suggests that the discussion of alternatives need not be exhaustive and that alternatives be subject to a construction of reasonableness. The impacts of the alternatives may be discussed in less detail than the significant effects of the project proposed.[5]

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1 *State CEQA Guidelines* Section 15126.6 (a)

2 *State CEQA Guidelines* Section 15126.6 (b)

3 *State CEQA Guidelines* Section 15126.6(e)(2)

4 *State CEQA Guidelines* Section 15126.6(c)

5 *State CEQA Guidelines* section 15126.6(d)

## PROJECT OBJECTIVES

The alternatives to the proposed project ultimately selected for analysis in this EIR were developed to avoid or substantially lessen one or more of the significant environmental impacts associated with the proposed project, while still meeting many of the project's objectives. The following are objectives for the proposed project:

- Generate revenue to fund City services and offset the costs associated with the Rose Bowl renovation project.
- Promote economic development in the project area and greater Pasadena through increased event activity and tourism.
- Conserve resources and avoid environmental impacts by utilizing existing infrastructure and parking facilities.
- Utilize the existing parking supply and establish a parking management plan to distribute parking consistent with arrival and departure directions to efficiently disperse project traffic, facilitate access to and from the site, and reduce traffic in the immediate vicinity to minimize potential pedestrian/vehicular conflicts.
- Avoid the need for new infrastructure through a transportation management plan, including information systems to advise patrons of transportation options and preferred alternatives.
- Provide additional entertainment opportunities to Pasadena residents that are not currently provided in the community.

## SELECTION OF ALTERNATIVES FOR ANALYSIS

According to the *State CEQA Guidelines*, the discussion of alternatives should focus on alternatives to a project or its location that can feasibly avoid or substantially lessen the significant effects of the project. The *State CEQA Guidelines* indicate that the range of alternatives included in this discussion should be sufficient to allow decision makers a reasoned choice. The alternative discussion should provide decision makers with an understanding of the merits and disadvantages of these alternatives.

**Section 3.0, Environmental Impact Analysis**, of this EIR concludes that proposed project implementation would result in significant and unavoidable environmental impacts. These impacts include:

- The temporary displacement of passive recreational uses,
- Intersection impacts at 60 of the 66 studied intersections during weekday events and 58 of 66 intersections during weekend events,
- Street segment impacts at 20 of the 27 studied street segments during the weekday events and 22 of 27 during weekend events.

- Traffic related noise impacts
- Operational air quality impacts (volatile organic compounds [VOC], oxides of nitrogen [NOx], carbon monoxide [CO], particulate matter 10 microns in diameter or less [PM10], particulate matter 2.5 microns in diameter or less [PM2.5])

In response to these significant impacts, the City of Pasadena developed and considered several alternatives to the project. These alternatives include:

- **Alternative 1** – No Project Alternative

The No Project Alternative assumes that an amendment to the Arroyo Seco Public Lands Ordinance would not occur and that the number of displacement events allowed annually at the Rose Bowl Stadium would continue to be 12.

- **Alternative 2** – Reduced Attendance Alternative

The Reduced Attendance Alternative would reduce per event attendance by approximately one-third, thereby allowing a maximum of 50,000 patrons at each event.

- **Alternative 3** – Reduced Non-NFL Displacement Event Alternative

The Reduced Non-NFL Displacement Event Alternative would reduce the number of additional displacement events from 13 to nine, for a five-year period and would be restricted to non-NFL events. These displacement events could be sports related, concerts, or other activities that have a maximum attendance of 75,000 patrons.

## ALTERNATIVES CONSIDERED BUT REJECTED AS INFEASIBLE

The *State CEQA Guidelines* require an EIR to identify any alternatives that were considered by the lead agency but were rejected as infeasible and briefly explain the reasons underlying the lead agency's determination. Section 15126.6(c) of the *State CEQA Guidelines* states the following:

> *The EIR should identify any alternatives what were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination…Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts."*

The analysis of alternatives started with an identification of a number of potential alternatives to the proposed project site that had the potential to reduce or eliminate the project's significant environmental impacts.

In accordance with *State CEQA Guidelines*, consideration was given to temporary use of alternate locations for NFL games. Los Angeles Memorial Coliseum and Dodger Stadium represent two of the most commonly discussed venues for NFL use. The Alternate Sites Alternative was considered but rejected as infeasible and is discussed below.

## Alternate Sites Alternative

### *Los Angeles Memorial Coliseum*

The Los Angeles Memorial Coliseum (Coliseum) is located at 3911 S. Figueroa Street approximately 2 miles southwest of downtown Los Angeles. It is bounded by Exposition Boulevard on the north, Martin Luther King Jr. Boulevard on the south, Vermont Avenue on the west, and Figueroa Street on the east. The Coliseum is under the authority of and currently operated by the Los Angeles Memorial Coliseum Commission (the Commission), a joint powers authority of the City of Los Angeles, Los Angeles County, and the State of California.

The Coliseum would not meet the most basic and fundamental project objective of generating revenue for the City of Pasadena, offsetting costs associated with the Rose Bowl renovations. For this reason, the Coliseum was deemed an infeasible alternative location for the proposed project.

### *Dodger Stadium*

Another location frequently discussed as a potential site for a football stadium is the Dodger Stadium site at Chavez Ravine. Dodger Stadium is located in Northeast Los Angeles, north and west of Chinatown, as well as north and east of the Echo Park neighborhood. Elysian Park is located adjacent to large parts of Dodger Stadium with the stadium being located east and south of the park. Barlow Respiratory Hospital is located adjacent to the main entry to the stadium near the intersection of Stadium Way and Elysian Park Avenue.

Like the Coliseum, Dodger Stadium would not achieve the most basic and fundamental objective for the project of generating revenue for the City of Pasadena, offsetting costs associated with Rose Bowl renovations. For this reason, Dodger Stadium was deemed infeasible as an alternative location for the proposed project.

## Alternative Site Conclusion

Neither of the two alternative sites analyzed above would meet the underlying purpose of the proposed project to offset the costs associated with the Rose Bowl renovations by generating revenue for the City's general fund.

## ANALYSIS METHODOLOGY

Each of the alternatives selected for analysis is evaluated in sufficient detail to determine whether its overall environmental impacts would be less, similar, or greater in comparison to the impacts of the proposed project. The impact analyses sections for the proposed project set forth in **Section 3.0** of this EIR include project design features and mitigation measures that reduce the environmental impacts of the proposed project. The analyses assume that equally effective project design features and mitigation measures would apply to the alternatives.

The analysis under each Alternative includes the following:

- An evaluation of the environmental impacts anticipated to occur for each environmental issue analyzed in Chapter 3 of this EIR and a determination as to the significance of those impacts. This discussion also includes an analysis of whether the Alternatives would avoid or substantially lessen any of the significant environmental impacts associated with the proposed project. Where the impacts of the alternative and the proposed project were roughly equivalent the comparative impact is said to be similar.
- A summary of the comparative impacts across all of the environmental issues.

## COMPARATIVE IMPACT ANALYSIS

### Alternative 1 – No Project

Section 15126(2)(4) of the *State CEQA Guidelines* requires evaluation of the No Project Alternative. As described in the *State CEQA Guidelines,* the purpose of describing and analyzing the No Project Alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. Therefore, as required by the *State CEQA Guidelines,* the analysis must examine the impacts that might reasonably be expected to occur in the foreseeable future if the proposed project was not approved. Under the No Project Alternative, the Arroyo Seco Public Lands Ordinance would not be amended and the Rose Bowl Stadium would continue to host a maximum of 12 displacement events annually.

This No Project analysis discusses the existing conditions at the time the Notice of Preparation was prepared as well as what would be reasonably expected to occur in the foreseeable future if the project was not approved.

### *Air Quality*

Under Alternative 1 there would be no additional events and therefore no activities that would result in air quality impacts to local receptors or the region. Impacts under the No Project Alternative would be less than the proposed project.

### *Greenhouse Gas*

Under Alternative 1 there would be no additional events and therefore no activities that would result in any new greenhouse gas emissions. There would be no greenhouse gas impacts associated with Alternative 1; impacts associated with the No Project Alternative would be less than the proposed project.

### *Land Use*

Under Alternative 1, the Arroyo Seco Public Lands Ordinance would not be amended; 12 displacement events would continue to be the maximum number of events per year at the Rose Bowl Stadium. As no significant land use impacts were identified, impacts under the No Project Alternative would be similar to the proposed project.

### *Noise*

Under Alternative 1, additional displacement events would not occur at the Rose Bowl Stadium. The currently permitted 12 displacement events would continue to occur, and noise generated by these events and event traffic would continue to affect nearby noise-sensitive uses. Under this alternative, no additional vehicle trips would be generated by additional displacement events, and the temporary increases in the ambient noise level as a result of project-related traffic would be avoided. This alternative would therefore result in less of an impact than the proposed project.

### *Public Services*

Under this Alternative, there would be no increase in the number of events and therefore, no increase in the need for police, fire, or emergency services. Although impacts would be less than significant with the proposed project, the increase in the number of days annually that would require Pasadena police at the Rose Bowl. Police are necessary for both traffic management and crowd management. Therefore, if no additional events were to occur at the Rose Bowl Stadium, no impact to police protection services would occur.

### *Recreation*

Under this Alternative, there would be no impact to recreational users of the Central Arroyo. The number of displacement events would remain at 12 events per year. However, this alternative would not provide the beneficial effect of providing a new type of entertainment use (NFL game viewing). Overall, because 13 additional displacement events would not occur and users of the arroyo would not be displaced, this alternative would reduce impacts to recreation when compared to the proposed project. The significant and unavoidable impact of restriction of use of certain recreational facilities in the Central Arroyo would be avoided under this alternative. Therefore, impacts under the No Project Alternative would be less than the proposed project.

### *Transportation, Circulation and Parking*

Under this alternative, the temporary use of the Rose Bowl by the NFL would not occur. Therefore, under this alternative, no new events would generate trips at the Rose Bowl. Current event patterns at the Rose Bowl would continue in the future. Impacts under the No Project Alternative would be less than the proposed project.

### *Conclusion*

The No Project Alternative would reduce the significant impacts associated with air quality, greenhouse gas emission, recreation, and transportation and circulation. Alternative 2 – Reduced Attendance Alternative

Alternative 2 was designed to reduce overall impacts and attempt to avoid or lessen significant and unavoidable transportation and traffic impacts caused by the proposed project. Under Alternative 2, attendance at events would be reduced by approximately one-third, to 50,000 patrons at each event.

### *Air Quality*

Alternative 2 would result in reduced traffic and therefore reduced emissions from mobile sources, as well as reduced energy use and a resultant reduction in emissions from area sources. Total weekday trips were determined to be 39,834 and weekend trips to be 37,184 Natural gas emissions are assumed to be two-thirds of the emissions from the proposed project due to a reduction in spectators of roughly one-third. Landscaping emissions are assumed to remain at the same rate, as there would be no change to landscaping requirements regardless of attendance. The resulting emissions estimates are shown in **Table 4.0-1.** The mobile emissions were calculated using CalEEMod and based on the weekday trip rate to provide a conservative analysis.

**Table 4.0-1**
**Estimated Unmitigated Operational Emissions – Alternative 2**

| Emissions Source | Emissions in Pounds per Day | | | | | |
|---|---|---|---|---|---|---|
| | VOC | NOx | CO | SOx | PM10 | PM2.5 |
| Operational (Mobile) Sources | 352.72 | 902.55 | 3,875.61 | 5.58 | 635.53 | 41.54 |
| Natural Gas | 0.12 | 2.68 | 0.45 | 0.00 | 0.01 | 0.01 |
| Landscape Equipment | | | | | | |
| Consumer Products | | | | | | |
| Event Emissions Total | 352.84 | 905.23 | 3,876.06 | 5.58 | 635.54 | 41.55 |
| **SCAQMD Threshold** | **55** | **55** | **550** | **150** | **150** | **55** |
| **Exceeds Threshold?** | **YES** | **YES** | **YES** | NO | **YES** | NO |

*Source: Impact Sciences, Inc. Emissions calculations are provided in **Appendix 3.1**.*
*Totals in table may not appear to add exactly due to rounding in the computer model calculations.*

While emissions would be reduced, with emissions of PM2.5 dropping below the significance threshold, impacts would still be significant for VOC, NOx, CO and PM10. Overall impacts would still be significant. However, as overall emissions would be reduced (although still significant for VOC, NOx, CO and PM10), impacts associated with Alternative 2 would be less than the proposed project.

## *Greenhouse Gas*

Under Alternative 2 attendance would be reduced by approximately one-third, which would result in a reduction in vehicle trips, energy and water use, and waste and wastewater generation. The emissions associated with mobile emissions were calculated using CalEEMod. Emissions from stationary and area sources were assumed to be proportional to the attendance figures, and so were reduced by one-third for a general estimate of greenhouse gas (GHG) emissions. Results are shown in **Table 4.0-2**, below.

**Table 4.0-2**
**Total Greenhouse Gas Emissions – Alternative 2**

| Operational GHG Emissions from Area, and Mobile and Indirect Sources | GHG Emissions ($MTCO_2e$/Year) |
|---|---|
| Proposed Project | |
| Mobile Sources | 3,191.26 |
| Electricity Use | 1,310.77 |
| Natural Gas Use | 16.34 |
| Wastewater Generation | 52.57 |
| Water Supply | 305.67 |
| Solid Waste | 13.04 |
| **Total Emissions** | **4,890** |
| **Emissions per SP** | **1.22** |
| **SCAQMD Threshold** | **4.8** |
| **Exceed Threshold?** | **NO** |

*$MTCO_2e$ = metric tons of $CO_2$ equivalent*
*Source: Impact Sciences, Inc. Emissions calculations are provided in* ***Appendix 3.2.***

As shown, emissions would be below significance thresholds for GHG emissions. GHG emissions associated with Alternative 2 would therefore be less than significant. Impacts would be slightly less (1.22 compared to 1.7 with the proposed project). Therefore, impacts associated with Alternative 2 would be slightly less than the proposed project.

## *Land Use*

Under Alternative 2, the Arroyo Seco Public Lands Ordinance would be amended to allow for 13 additional displacement events at the Rose Bowl Stadium. However, attendance would be limited to 50,000 patrons. The project vicinity, which includes residential communities on three sides, is affected on existing game days or during other displacement events at the stadium. In particular, many communities that surround the Rose Bowl experience increased traffic that often disrupts the neighborhood on game days. These communities experience increased vehicle congestion (including shuttle buses). Street closures are frequent and vary depending on traffic on a game day. However, while the increased traffic, shuttle buses, and pedestrian activity may be an annoyance on game days, the effects are generally temporary beginning immediately before games and lasting until 1 to 2 hours after events. However, as events would be limited to 50,000 patrons (compared to 75,000 under the proposed project), this Alternative would reduce potential impacts compared to the proposed project.

### *Noise*

Under Alternative 2, attendance at the proposed additional displacement events would be capped at 50,000 patrons. Limiting the number of attendees at displacement events would result in an incremental reduction in crowd noise during events, and in noise generated by vehicle trips. As with the proposed project, event noise would not be expected to result in significant noise impacts to noise-sensitive uses near the Rose Bowl stadium. The reduction in vehicle trips would result in an incremental decrease in noise levels experienced at nearby noise-sensitive uses before and after displacement events. However, this alternative would be expected to result in temporary increases in ambient noise levels above City of Pasadena noise level standards. Therefore, impacts under this alternative would be similar to the proposed project.

### *Public Services*

Under Alternative 2, 13 additional events would occur at the Rose Bowl on an annual basis. However, attendance at events would be limited to 50,000 patrons. This decrease in attendance (compared to the proposed project) would require fewer police, fire and emergency personnel on game days. Further, because traffic would be reduced slightly the number of police required on game days for traffic management could also be reduced. The Reduced Attendance Alternative would result in similar numbers of patrons at events as at recent UCLA games, which could be slightly fewer than under the proposed project. However, police, fire, and other emergency personnel would still be required on game days for crowd management and traffic control. As stated in **Section 3.5 Public Services**, the NFL would be required to supplement Pasadena police services with private police protection services as necessary. It is likely that because a limited number of Pasadena police officers are available, the number required by Alternative 2 could still require a supplement with private police protection. Therefore, under Alternative 2, impacts to public services would be similar to the proposed project.

### *Recreation*

Under this Alternative, a maximum of 25 displacement events would occur annually at the Rose Bowl Stadium. However, attendance would be limited to 50,000 patrons. The reduction in the number of patrons would improve conditions surrounding the Rose Bowl on game days compared to the proposed project. However, 50,000 patrons is approximately the attendance at existing UCLA games and while congestion and therefore access by recreational users would be slightly improved, it is anticipated that most recreational users would continue to avoid the Rose Bowl area on game days. In addition, the events would be NFL events and therefore would occur during football season. As discussed in **Section 3.5 Recreation**, the combination of UCLA football and NFL events occurring over the same few

months would result in the Rose Bowl area being unavailable for certain recreational uses for substantial periods between August and January. Therefore, recreational impacts would be similar under Alternative 2.

## *Transportation and Traffic*

This alternative would reduce the maximum allowable attendance by one-third, thereby allowing a maximum of 50,000 spectators for each game. Trip generation estimates for Alternative 2 are detailed in **Table 4.0-3**. Inclusive of spectator, employee, and shuttle trips, the reduced alternative is expected to generate approximately 9,159 trips during the weekday arrival period and 14,378 trips during the weekday departure period. The reduced alternative is expected to generate approximately 6,797 trips during the weekend arrival period and 10,835 trips during the weekend departure period. The trip generation for this alternative is approximately 33 percent lower than that of the proposed project.

A quantitative level of service and significant impact analysis was conducted for this alternative. Table **4.0-4** and Table **4.0-5** show the Existing and Future with Reduced Project level of service and significant impact analysis. As shown in the tables, the reduced attendance alternative would result in significant impacts at 55 of the 66 study intersections during the weekday period under the Existing and Future with Project scenarios. During weekend events, out of the 66 intersections analyzed, the project is expected to result in significant impacts at 55 intersections under Existing with Project scenario and 54 intersections under the Future with Project scenario. This is five fewer intersections experiencing Existing with Project weekday impacts, four fewer intersections experiencing Existing with Project weekend impacts, five fewer intersections experiencing Future with Project weekday, and five fewer intersections experiencing Future with Project weekend impacts as compared with the proposed project.

**Table 4.0-6** shows the results of street segment level of service and significant impact analysis for the reduced project alternative. As shown in the table, the project will results in 17 significantly impacted segments during a weekday and 20 significantly impacted street segments on a weekend. This is three and two fewer significantly impacted segments on a weekday and weekend, respectively.

**Table 4.0-3**
**Trip Generation Estimates – Alternative 2 (Reduced Attendance Alternative)**

| | Weekday | | | | | | Weekend | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Peak Hour Arrival | | | Peak Hour Departure | | | Peak Hour Arrival | | | Peak Hour Departure | | |
| Land Use | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total |
| Rose Bowl: Spectators | 6,269 | 0 | 6,269 | 0 | 9,403 | 9,403 | 4,467 | 0 | 4,467 | 0 | 6,700 | 6,700 |
| Employees | 0 | 0 | 0 | 0 | 640 | 640 | 0 | 0 | 0 | 0 | 640 | 640 |
| Parsons Site: Spectators | 2,250 | 0 | 2,250 | 0 | 3,375 | 3,375 | 1,800 | 0 | 1,800 | 0 | 2,700 | 2,700 |
| Employees | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shuttle Trips | 320 | 320 | 640 | 480 | 480 | 960 | 265 | 265 | 530 | 398 | 397 | 795 |
| TOTAL | 8,839 | 320 | 9,159 | 480 | 13,989 | 14,378 | 6,532 | 265 | 6,797 | 398 | 10,437 | 10,835 |

*Based on attendance of 50,000 spectators and 3,000 employees.*
*Source: Rose Bowl Traffic Study, Fehr & Peers, 2012*

## *Conclusion*

As discussed above, although Alternative 2 would not reduce any impacts to a level below significant, the severity of transportation, air quality, GHG, and recreation impacts would be reduced. Alternative 2 would reduce the significant and unavoidable transportation and traffic impacts as follows:

- Five fewer intersections experiencing Existing with Project weekday impacts
- Four fewer intersections experiencing Existing with Project weekend impacts
- Five fewer intersections experiencing Future with Project weekday and five fewer intersections experiencing Future with Project weekend impacts as compared with the proposed project
- Three and two fewer significantly impacted segments on a weekday and weekend, respectively

**Table 4.0-4**
**Intersection Level of Service Results – Alternative 2 (Reduced Attendance Alternative) – Weekday Conditions**

| | Intersection | Control | Jurisdiction | Peak Hour | Existing V/C | Existing LOS | Existing w/ Project V/C | Existing w/ Project LOS | V/C Change | Significant Impact | Future Pre-Project w/Ambient + Related Projects V/C | Future Pre-Project w/Ambient + Related Projects LOS | Future w/ Project V/C | Future w/ Project LOS | V/C Change | Significant Impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | San Rafael Avenue & SR-134 Freeway Westbound (WB) Ramps | Signal | Pasadena | Weekday Pre-Event | 0.309 | A | 0.309 | A | 0.000 | NO | 0.324 | A | 0.324 | A | 0.000 | NO |
| | | | | Weekday Post-Event | 0.181 | A | 0.453 | A | 0.272 | YES | 0.188 | A | 0.454 | A | 0.266 | YES |
| 2 | San Rafael Avenue & SR-134 Freeway Eastbound (EB) Ramps | Signal | Pasadena | Weekday Pre-Event | 0.493 | A | 0.866 | D | 0.373 | YES | 0.576 | A | 0.961 | E | 0.385 | YES |
| | | | | Weekday Post-Event | 0.241 | A | 0.281 | A | 0.040 | NO | 0.275 | A | 0.315 | A | 0.040 | NO |
| 3 | West Drive & Salvia Canyon Road | TWSC [a] | Pasadena | Weekday Pre-Event | 0.166 | A | | [d] | | YES | 0.167 | A | | [d] | | YES |
| | | | | Weekday Post-Event | 0.138 | A | | | | YES | 0.138 | A | | | | YES |
| 4 | West Drive & Seco Street | TWSC [a] | Pasadena | Weekday Pre-Event | 0.262 | A | | [d] | | YES | 0.264 | A | | [d] | | YES |
| | | | | Weekday Post-Event | 0.178 | A | | | | YES | 0.180 | A | | | | YES |
| 5 | Rosemont Avenue & Washington Boulevard | AWSC [a] | Pasadena | Weekday Pre-Event | 0.203 | A | | [d] | | YES | 0.203 | A | | [d] | | YES |
| | | | | Weekday Post-Event | 0.147 | A | | | | YES | 0.147 | A | | | | YES |
| 6 | Rosemont Avenue & Seco Street | AWSC [a] | Pasadena | Weekday Pre-Event | 0.312 | A | | [d] | | YES | 0.315 | A | | [d] | | YES |
| | | | | Weekday Post-Event | 0.181 | A | | | | YES | 0.181 | A | | | | YES |
| 7 | Orange Grove Boulevard & Holly Street/I-210 Freeway WB Off-Ramp and EB On-Ramp | Signal | Pasadena | Weekday Pre-Event | 0.588 | A | 1.200 | F | 0.612 | YES | 0.596 | A | 1.207 | F | 0.611 | YES |
| | | | | Weekday Post-Event | 0.297 | A | 1.631 | F | 1.334 | YES | 0.300 | A | 1.633 | F | 1.333 | YES |
| 8 | Orange Grove Boulevard & SR-134 Freeway EB Off-Ramp and WB On-Ramp/Colorado Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.622 | B | 1.213 | F | 0.591 | YES | 0.686 | B | 1.204 | F | 0.518 | YES |
| | | | | Weekday Post-Event | 0.436 | A | 1.088 | F | 0.652 | YES | 0.459 | A | 1.11 | F | 0.651 | YES |
| 9 | North Arroyo Boulevard & I-210 Freeway WB Ramps | Signal | Altadena | Weekday Pre-Event | 0.503 | A | 0.53 | A | 0.027 | NO | 0.523 | A | 0.55 | A | 0.027 | NO |
| | | | | Weekday Post-Event | 0.258 | A | 0.731 | C | 0.473 | YES | 0.26 | A | 0.733 | C | 0.473 | YES |
| 10 | North Arroyo Boulevard & I-210 Freeway EB Ramps | Signal | Pasadena | Weekday Pre-Event | 0.506 | A | 0.626 | B | 0.120 | YES | 0.52 | A | 0.638 | B | 0.118 | YES |
| | | | | Weekday Post-Event | 0.253 | A | 0.575 | A | 0.322 | YES | 0.255 | A | 0.579 | A | 0.324 | YES |
| 11 | I-210 Freeway EB Ramps & Howard Street | TWSC [a] | Pasadena | Weekday Pre-Event | 0.303 | A | 0.356 | A | 0.053 | NO | 0.307 | A | 0.359 | A | 0.052 | NO |
| | | | | Weekday Post-Event | 0.167 | A | 0.167 | A | 0.000 | NO | 0.168 | A | 0.168 | A | 0.000 | NO |
| 12 | Lincoln Avenue & I-210 Freeway WB Ramps | Signal | Pasadena | Weekday Pre-Event | 0.61 | B | 0.619 | B | 0.009 | NO | 0.618 | B | 0.627 | B | 0.009 | NO |
| | | | | Weekday Post-Event | 0.37 | A | 0.429 | A | 0.059 | NO | 0.374 | A | 0.433 | A | 0.059 | NO |
| 13 | I-210 Freeway EB Ramps & Mountain Street | TWSC [a] | Pasadena | Weekday Pre-Event | 0.353 | A | 0.63 | B | 0.277 | YES | 0.38 | A | 0.632 | B | 0.252 | YES |
| | | | | Weekday Post-Event | 0.238 | A | 0.888 | D | 0.650 | YES | 0.248 | A | 0.898 | D | 0.650 | YES |
| 14 | I-210 Freeway WB Ramps & Mountain Street | TWSC [a] | Pasadena | Weekday Pre-Event | 0.448 | A | 0.934 | E | 0.486 | YES | 0.474 | A | 0.95 | E | 0.476 | YES |
| | | | | Weekday Post-Event | 0.273 | A | 0.457 | A | 0.184 | YES | 0.28 | A | 0.464 | A | 0.184 | YES |
| 15 | I-210 Freeway EB Ramp & Foothill Boulevard | Un-Controlled | La Canada | Weekday Pre-Event | 0.499 | A | 0.499 | A | 0.000 | NO | 0.504 | A | 0.504 | A | 0.000 | NO |
| | | | | Weekday Post-Event | 0.226 | A | 0.226 | A | 0.000 | NO | 0.228 | A | 0.228 | A | 0.000 | NO |
| 16 | I-210 Freeway WB Off-Ramp/Crown Avenue & Foothill Boulevard | Signal | La Canada | Weekday Pre-Event | 0.53 | A | 0.53 | A | 0.000 | NO | 0.537 | A | 0.537 | A | 0.000 | NO |
| | | | | Weekday Post-Event | 0.275 | A | 0.289 | A | 0.014 | NO | 0.278 | A | 0.292 | A | 0.014 | NO |
| 17 | Oak Grove Drive & Foothill Boulevard | Signal | La Canada | Weekday Pre-Event | 0.56 | A | 0.578 | A | 0.018 | NO | 0.567 | A | 0.585 | A | 0.018 | NO |
| | | | | Weekday Post-Event | 0.202 | A | 0.216 | A | 0.014 | NO | 0.204 | A | 0.218 | A | 0.014 | NO |
| 18 | I-210 Freeway EB Ramps & Berkshire Place | AWSC [a] | La Canada | Weekday Pre-Event | 0.591 | A | 0.721 | C | 0.130 | YES | 0.62 | B | 0.75 | C | 0.130 | YES |
| | | | | Weekday Post-Event | 0.286 | A | 0.286 | A | 0.000 | NO | 0.289 | A | 0.289 | A | 0.000 | NO |

| | Intersection | Control | Jurisdiction | Peak Hour | Existing V/C | Existing LOS | Existing w/ Project V/C | Existing w/ Project LOS | V/C Change | Significant Impact | Future Pre-Project w/Ambient + Related Projects V/C | Future Pre-Project w/Ambient + Related Projects LOS | Future w/ Project V/C | Future w/ Project LOS | V/C Change | Significant Impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | I-210 Freeway WB Ramps & Berkshire Place | TWSC [a] | La Canada | Weekday Pre-Event | 0.495 | A | 0.495 | A | 0.000 | NO | 0.525 | A | 0.525 | A | 0.000 | NO |
| | | | | Weekday Post-Event | 0.25 | A | 0.469 | A | 0.219 | YES | 0.252 | A | 0.471 | A | 0.219 | YES |
| 20 | Linda Vista Avenue & Highland Drive | AWSC [a] | Pasadena | Weekday Pre-Event | 0.279 | A | 0.514 | A | 0.235 | YES | 0.282 | A | 0.517 | A | 0.235 | YES |
| | | | | Weekday Post-Event | 0.152 | A | 0.34 | A | 0.188 | YES | 0.152 | A | 0.34 | A | 0.188 | YES |
| 21 | Linda Vista Avenue & Oak Grove Drive | TWSC [a] | Pasadena | Weekday Pre-Event | 0.289 | A | 0.289 | A | 0.000 | NO | 0.304 | A | 0.304 | A | 0.000 | NO |
| | | | | Weekday Post-Event | 0.162 | A | 0.397 | A | 0.235 | YES | 0.162 | A | 0.397 | A | 0.235 | YES |
| 22 | Windsor Avenue & Ventura Street | TWSC [a] | Altadena | Weekday Pre-Event | 0.557 | A | 0.557 | A | 0.000 | NO | 0.564 | A | 0.564 | A | 0.000 | NO |
| | | | | Weekday Post-Event | 0.287 | A | 0.287 | A | 0.000 | NO | 0.289 | A | 0.289 | A | 0.000 | NO |
| 23 | North Arroyo Boulevard/Windsor Avenue & Woodbury Road | Signal | Altadena | Weekday Pre-Event | 0.556 | A | 0.565 | A | 0.009 | NO | 0.577 | A | 0.586 | A | 0.009 | NO |
| | | | | Weekday Post-Event | 0.282 | A | 0.311 | A | 0.029 | NO | 0.284 | A | 0.313 | A | 0.029 | NO |
| 24 | Arroyo Boulevard & Lower Arroyo Park Entrance | TWSC [a] | Pasadena | Weekday Pre-Event | 0.182 | A | 0.429 | A | 0.247 | YES | 0.183 | A | 0.429 | A | 0.246 | YES |
| | | | | Weekday Post-Event | 0.117 | A | 0.212 | A | 0.095 | YES | 0.117 | A | 0.212 | A | 0.095 | YES |
| 25 | Arroyo Boulevard & California Boulevard | AWSC [a] | Pasadena | Weekday Pre-Event | 0.385 | A | 0.559 | A | 0.174 | YES | 0.388 | A | 0.561 | A | 0.173 | YES |
| | | | | Weekday Post-Event | 0.180 | A | 0.262 | A | 0.082 | YES | 0.180 | A | 0.262 | A | 0.082 | YES |
| 26 | Orange Grove Boulevard & California Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.916 | E | 1.155 | F | 0.239 | YES | 0.978 | E | 1.218 | F | 0.240 | YES |
| | | | | Weekday Post-Event | 0.579 | A | 1.914 | F | 1.335 | YES | 0.628 | B | 1.958 | F | 01.330 | YES |
| 27 | Arroyo Parkway & California Boulevard (CMP – Monitoring Station) [c] | Signal | Pasadena | Weekday Pre-Event | 0.993 | E | 1.204 | F | 0.211 | YES | 1.038 | F | 1.250 | F | 0.212 | YES |
| | | | | Weekday Post-Event | 0.458 | A | 1.132 | F | 0.674 | YES | 0.477 | A | 1.150 | F | 0.673 | YES |
| 28 | Pasadena Avenue & California Boulevard (CMP – Monitoring Station) | Signal | Pasadena | Weekday Pre-Event | 0.935 | E | 0.967 | E | 0.032 | YES | 0.947 | E | 0.980 | E | 0.033 | YES |
| | | | | Weekday Post-Event | 0.451 | A | 0.601 | B | 0.150 | YES | 0.457 | A | 0.604 | B | 0.147 | YES |
| 29 | St. John Avenue & California Boulevard (CMP – Monitoring Station) | Signal | Pasadena | Weekday Pre-Event | 0.666 | B | 0.752 | C | 0.086 | YES | 0.676 | B | 0.761 | C | 0.085 | YES |
| | | | | Weekday Post-Event | 0.327 | A | 0.672 | B | 0.345 | YES | 0.331 | A | 0.675 | B | 0.344 | YES |
| 30 | St. John Avenue & Colorado Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.529 | A | 0.589 | A | 0.060 | YES | 0.625 | B | 0.685 | B | 0.060 | YES |
| | | | | Weekday Post-Event | 0.302 | A | 0.432 | A | 0.130 | YES | 0.324 | A | 0.470 | A | 0.146 | YES |
| 31 | Pasadena Avenue & Union Street | Signal | Pasadena | Weekday Pre-Event | 0.371 | A | 0.559 | A | 0.188 | YES | 0.399 | A | 0.587 | A | 0.188 | YES |
| | | | | Weekday Post-Event | 0.233 | A | 0.515 | A | 0.282 | YES | 0.245 | A | 0.527 | A | 0.282 | YES |
| 32 | Pasadena Avenue & Colorado Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.382 | A | 0.490 | A | 0.108 | YES | 0.438 | A | 0.545 | A | 0.107 | YES |
| | | | | Weekday Post-Event | 0.283 | A | 0.375 | A | 0.092 | YES | 0.306 | A | 0.396 | A | 0.090 | YES |
| 33 | Pasadena Avenue & Green Street | Signal | Pasadena | Weekday Pre-Event | 0.320 | A | 0.340 | A | 0.020 | NO | 0.326 | A | 0.346 | A | 0.020 | NO |
| | | | | Weekday Post-Event | 0.176 | A | 0.176 | A | 0.000 | NO | 0.178 | A | 0.178 | A | 0.000 | NO |
| 34 | Fair Oaks Avenue & Walnut Street | Signal | Pasadena | Weekday Pre-Event | 0.690 | B | 0.845 | D | 0.155 | YES | 0.977 | E | 1.132 | F | 0.155 | YES |
| | | | | Weekday Post-Event | 0.370 | A | 0.995 | E | 0.625 | YES | 0.481 | A | 1.116 | F | 0.635 | YES |
| 35 | Fair Oaks Avenue & Union Street | Signal | Pasadena | Weekday Pre-Event | 0.500 | A | 0.741 | C | 0.241 | YES | 0.618 | B | 0.816 | D | 0.198 | YES |
| | | | | Weekday Post-Event | 0.326 | A | 0.531 | A | 0.205 | YES | 0.360 | A | 0.574 | A | 0.214 | YES |
| 36 | Fair Oaks Avenue & Colorado Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.505 | A | 0.820 | D | 0.315 | YES | 0.622 | B | 0.897 | D | 0.275 | YES |
| | | | | Weekday Post-Event | 0.364 | A | 0.808 | D | 0.444 | YES | 0.407 | A | 0.847 | D | 0.440 | YES |
| 37 | Fair Oaks Avenue & Green Street | Signal | Pasadena | Weekday Pre-Event | 0.555 | A | 0.765 | C | 0.210 | YES | 0.629 | B | 0.839 | D | 0.210 | YES |
| | | | | Weekday Post-Event | 0.362 | A | 0.694 | B | 0.332 | YES | 0.394 | A | 0.724 | C | 0.330 | YES |
| 38 | Arroyo Parkway & Colorado Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.552 | A | 0.979 | C | 0.245 | YES | 0.571 | A | 0.816 | D | 0.245 | YES |
| | | | | Weekday Post-Event | 0.393 | A | 0.719 | C | 0.326 | YES | 0.401 | A | 0.723 | C | 0.322 | YES |

| | Intersection | Control | Jurisdiction | Peak Hour | Existing V/C | Existing LOS | Existing w/ Project V/C | Existing w/ Project LOS | V/C Change | Significant Impact | Future Pre-Project w/Ambient + Related Projects V/C | Future Pre-Project w/Ambient + Related Projects LOS | Future w/ Project V/C | Future w/ Project LOS | V/C Change | Significant Impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 39 | Lincoln Avenue & Woodbury Road [b] | Signal | Altadena | Weekday Pre-Event | 0.900 | D | 0.900 | D | 0.000 | NO | 0.911 | E | 0.911 | E | 0.000 | NO |
| | | | | Weekday Post-Event | 0.471 | A | 0.530 | A | 0.059 | NO | 0.478 | A | 0.537 | A | 0.059 | NO |
| 40 | Fair Oaks Avenue & Woodbury Road | Signal | Altadena | Weekday Pre-Event | 0.554 | A | 0.563 | A | 0.009 | NO | 0.576 | A | 0.584 | A | 0.008 | NO |
| | | | | Weekday Post-Event | 0.321 | A | 0.365 | A | 0.044 | NO | 0.330 | A | 0.374 | A | 0.044 | NO |
| 41 | Lincoln Avenue & Washington Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.404 | A | 0.468 | A | 0.064 | YES | 0.411 | A | 0.473 | A | 0.062 | YES |
| | | | | Weekday Post-Event | 0.230 | A | 0.454 | A | 0.224 | YES | 0.232 | A | 0.456 | A | 0.224 | YES |
| 42 | Fair Oaks Avenue & Washington Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.607 | B | 0.607 | B | 0.000 | NO | 0.677 | B | 0.677 | B | 0.000 | NO |
| | | | | Weekday Post-Event | 0.339 | A | 0.384 | A | 0.045 | NO | 0.368 | A | 0.412 | A | 0.044 | NO |
| 43 | Lincoln Avenue & Mountain Street/Seco Street | Signal | Pasadena | Weekday Pre-Event | 0.442 | A | 0.906 | E | 0.464 | YES | 0.446 | A | 0.911 | E | 0.465 | YES |
| | | | | Weekday Post-Event | 0.305 | A | 0.879 | D | 0.574 | YES | 0.309 | A | 0.883 | D | 0.574 | YES |
| 44 | Fair Oaks Avenue & Mountain Street | Signal | Pasadena | Weekday Pre-Event | 0.516 | A | 0.865 | D | 0.349 | YES | 0.558 | A | 0.909 | E | 0.351 | YES |
| | | | | Weekday Post-Event | 0.308 | A | 0.787 | C | 0.479 | YES | 0.326 | A | 0.802 | D | 0.476 | YES |
| 45 | St. John Avenue/I-210 Eastbound Off-Ramp & Walnut Street | Signal | Pasadena | Weekday Pre-Event | 0.416 | A | 0.607 | B | 0.191 | YES | 0.448 | A | 0.644 | B | 0.196 | YES |
| | | | | Weekday Post-Event | 0.187 | A | 0.299 | A | 0.112 | YES | 0.197 | A | 0.308 | A | 0.111 | YES |
| 46 | Pasadena Avenue/I-210 Westbound On-Ramp & Walnut Street | Signal | Pasadena | Weekday Pre-Event | 0.573 | A | 0.562 | A | -0.011 | NO | 0.580 | A | 0.568 | A | -0.012 | NO |
| | | | | Weekday Post-Event | 0.272 | A | 0.475 | A | 0.203 | YES | 0.275 | A | 0.478 | A | 0.203 | YES |
| 47 | Fair Oaks Avenue & Orange Grove Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.642 | B | 0.911 | E | 0.269 | YES | 0.694 | B | 0.958 | E | 0.264 | YES |
| | | | | Weekday Post-Event | 0.357 | A | 0.671 | B | 0.314 | YES | 0.377 | A | 0.690 | B | 0.313 | YES |
| 48 | Fair Oaks Avenue & Maple Street/I-210 Westbound Ramps/SR 134 Westbound Ramps | Signal | Pasadena | Weekday Pre-Event | 0.646 | B | 0.967 | E | 0.321 | YES | 0.798 | C | 1.068 | F | 0.270 | YES |
| | | | | Weekday Post-Event | 0.314 | A | 0.723 | C | 0.409 | YES | 0.382 | A | 0.783 | C | 0.401 | YES |
| 49 | Fair Oaks Avenue & Corson Street/SR 134 Eastbound Ramps | Signal | Pasadena | Weekday Pre-Event | 0.646 | B | 0.790 | C | 0.144 | YES | 0.761 | C | 0.861 | D | 0.100 | YES |
| | | | | Weekday Post-Event | 0.327 | A | 0.150 | F | 0.823 | YES | 0.377 | A | 1.202 | F | 0.825 | YES |
| 50 | Arroyo Parkway & Union Street | Signal | Pasadena | Weekday Pre-Event | 0.367 | A | 0.544 | A | 0.177 | YES | 0.383 | A | 0.562 | A | 0.179 | YES |
| | | | | Weekday Post-Event | 0.218 | A | 0.208 | A | 0.000 | NO | 0.224 | A | 0.224 | A | 0.000 | NO |
| 51 | Linda Vista Avenue & Holly Street | Signal | Pasadena | Weekday Pre-Event | 0.505 | A | 1.266 | F | 0.721 | YES | 0.511 | A | 1.230 | F | 0.719 | YES |
| | | | | Weekday Post-Event | 0.271 | A | 0.792 | C | 0.521 | YES | 0.272 | A | 0.793 | C | 0.521 | YES |
| 52 | Arroyo Parkway & Del Mar Boulevard [c] | Signal | Pasadena | Weekday Pre-Event | 0.908 | E | 1.062 | F | 0.154 | YES | 1.039 | F | 1.194 | F | 0.155 | YES |
| | | | | Weekday Post-Event | 0.466 | A | 0.706 | C | 0.240 | YES | 0.513 | A | 0.765 | C | 0.252 | YES |
| 53 | Fair Oaks Avenue & California Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.725 | C | 1.031 | F | 0.306 | YES | 0.778 | C | 1.089 | F | 0.311 | YES |
| | | | | Weekday Post-Event | 0.380 | A | 1.041 | F | 0.661 | YES | 0.402 | A | 1.061 | F | 0.659 | YES |
| 54 | Fair Oaks Avenue & Glenarm Street | Signal | Pasadena | Weekday Pre-Event | 0.965 | E | 1.246 | F | 0.281 | YES | 1.021 | F | 1.297 | F | 0.276 | YES |
| | | | | Weekday Post-Event | 0.508 | A | 0.993 | E | 0.485 | YES | 0.531 | A | 1.017 | F | 0.485 | YES |
| 55 | Arroyo Parkway & Glenarm Street [c] | Signal | Pasadena | Weekday Pre-Event | 1.062 | F | 1.250 | F | 0.188 | YES | 1.095 | F | 1.283 | F | 0.188 | YES |
| | | | | Weekday Post-Event | 0.442 | A | 0.781 | C | 0.339 | YES | 0.456 | A | 0.797 | C | 0.341 | YES |
| 56 | Fair Oaks Avenue & I-110 Southbound On-Ramp/State Street | Signal | South Pasadena | Weekday Pre-Event | 0.589 | A | 0.910 | E | 0.321 | YES | 0.638 | B | 0.959 | E | 0.321 | YES |
| | | | | Weekday Post-Event | 0.325 | A | 1.140 | F | 0.815 | YES | 0.338 | A | 1.160 | F | 0.822 | YES |
| 57 | Fair Oaks Avenue & I-110 Northbound Off-Ramp/Grevalia Street | Signal | South Pasadena | Weekday Pre-Event | 0.892 | D | 1.440 | F | 0.548 | YES | 0.962 | E | 1.533 | F | 0.571 | YES |
| | | | | Weekday Post-Event | 0.466 | A | 0.535 | A | 0.069 | YES | 0.493 | A | 0.562 | A | 0.069 | YES |
| 58 | Orange Grove Avenue & I-110 Southbound Ramps | Signal | South Pasadena | Weekday Pre-Event | 0.515 | A | 0.722 | C | 0.207 | YES | 0.550 | A | 0.744 | C | 0.194 | YES |
| | | | | Weekday Post-Event | 0.323 | A | 0.323 | A | 0.000 | NO | 0.332 | A | 0.332 | A | 0.000 | NO |

| | Intersection | Control | Jurisdiction | Peak Hour | Existing V/C | Existing LOS | Existing w/ Project V/C | Existing w/ Project LOS | V/C Change | Significant Impact | Future Pre-Project w/Ambient + Related Projects V/C | Future Pre-Project w/Ambient + Related Projects LOS | Future w/ Project V/C | Future w/ Project LOS | V/C Change | Significant Impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 59 | Orange Grove Avenue & I-110 Northbound Ramps | Signal | South Pasadena | Weekday Pre-Event | 0.736 | C | 0.994 | E | 0.258 | YES | 0.816 | D | 1.075 | F | 0.259 | YES |
| | | | | Weekday Post-Event | 0.416 | A | 0.415 | A | 0.000 | NO | 0.449 | A | 0.449 | A | 0.000 | NO |
| 60 | Orange Grove Avenue & Del Mar Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.504 | A | 0.741 | C | 0.237 | YES | 0.529 | A | 0.778 | C | 0.249 | YES |
| | | | | Weekday Post-Event | 0.398 | A | 1.508 | F | 1.110 | YES | 0.418 | A | 1.538 | F | 1.120 | YES |
| 61 | St. John Avenue & Del Mar Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.466 | A | 0.539 | A | 0.073 | YES | 0.546 | A | 0.620 | B | 0.074 | YES |
| | | | | Weekday Post-Event | 0.256 | A | 0.256 | A | 0.000 | NO | 0.288 | A | 0.288 | A | 0.000 | NO |
| 62 | Pasadena Avenue & Del Mar Boulevard | Signal | Pasadena | Weekday Pre-Event | 0.498 | A | 0.591 | A | 0.093 | YES | 0.563 | A | 0.656 | B | 0.093 | YES |
| | | | | Weekday Post-Event | 0.248 | A | 0.248 | A | 0.000 | NO | 0.274 | A | 0.274 | A | 0.000 | NO |
| 63 | Fair Oaks Avenue & Del Mar Boulevard | Signal | South Pasadena | Weekday Pre-Event | 0.638 | B | 0.831 | D | 0.193 | YES | 0.789 | C | 0.981 | E | 0.192 | YES |
| | | | | Weekday Post-Event | 0.349 | A | 0.695 | B | 0.346 | YES | 0.406 | A | 0.743 | C | 0.337 | YES |
| 64 | Orange Grove Avenue & Columbia Street | Signal | South Pasadena | Weekday Pre-Event | 0.641 | B | 0.833 | D | 0.192 | YES | 0.664 | B | 0.855 | D | 0.191 | YES |
| | | | | Weekday Post-Event | 0.353 | A | 0.668 | B | 0.315 | YES | 0.362 | A | 0.684 | B | 0.332 | YES |
| 65 | Pasadena Avenue/Fremont Avenue & Columbia Street | Signal | South Pasadena | Weekday Pre-Event | 0.782 | C | 0.867 | D | 0.085 | YES | 0.792 | C | 0.877 | D | 0.085 | YES |
| | | | | Weekday Post-Event | 0.440 | A | 0.562 | A | 0.122 | YES | 0.445 | A | 0.566 | A | 0.121 | YES |
| 66 | Fair Oaks Avenue & Columbia Street | Signal | South Pasadena | Weekday Pre-Event | 0.610 | B | 0.816 | D | 0.206 | YES | 0.662 | B | 0.862 | D | 0.200 | YES |
| | | | | Weekday Post-Event | 0.358 | A | 0.873 | D | 0.515 | YES | 0.380 | A | 0.894 | D | 0.514 | YES |

*Note:*
*The base traffic flow capacity was assumed to be 1,700 vehicles per hour per lane, based on consultation with the City of Pasadena staff.*
*Source: Rose Bowl Traffic Study, Fehr & Peers, 2012*
*[a] Intersection is controlled by stop signs and uses HCM unsignalized methodology.*
*[b] Intersection was under construction at the time of data collection.*
*[c] Capacity reductions were taken to moves affected by the loss in green time associated with Metro Gold line trains.*
*[d] Since this study intersection is completely reconfigured for game days and operation is controlled by traffic control officers, a comparison of the without project V/C and level of service would not accurately convey the changes that occur at this intersection as a result of the project.*

**Table 4.0-5**
**Intersection Level of Service Results – Alternative 2 (Reduced Attendance Alternative) – Weekend Conditions**

| | Intersection | Control | Jurisdiction | Peak Hour | Existing V/C | Existing LOS | Existing w/ Project V/C | Existing w/ Project LOS | V/C Change | Significant Impact | Future Pre-Project w/Ambient + Related Projects V/C | Future Pre-Project w/Ambient + Related Projects LOS | Future w/ Project V/C | Future w/ Project LOS | V/C Change | Significant Impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | San Rafael Avenue & SR-134 Freeway Westbound (WB) Ramps | Signal | Pasadena | Weekend Pre-Event | 0.26 | A | 0.26 | A | 0.000 | NO | 0.268 | A | 0.268 | A | 0.000 | NO |
| | | | | Weekend Post-Event | 0.261 | A | 0.423 | A | 0.162 | YES | 0.270 | A | 0.424 | A | 0.154 | YES |
| 2 | San Rafael Avenue & SR-134 Freeway Eastbound (EB) Ramps | Signal | Pasadena | Weekend Pre-Event | 0.36 | A | 0.628 | B | 0.268 | YES | 0.376 | A | 0.646 | B | 0.270 | YES |
| | | | | Weekend Post-Event | 0.364 | A | 0.396 | A | 0.032 | NO | 0.380 | A | 0.412 | A | 0.032 | NO |
| 3 | West Drive & Salvia Canyon Road | TWSC [a] | Pasadena | Weekend Pre-Event | 0.149 | A | | [d] | | YES | 0.167 | A | | [d] | | YES |
| | | | | Weekend Post-Event | 0.158 | A | | | | YES | 0.138 | A | | | | YES |
| 4 | West Drive & Seco Street | TWSC [a] | Pasadena | Weekend Pre-Event | 0.318 | A | | [d] | | YES | 0.264 | A | | [d] | | YES |
| | | | | Weekend Post-Event | 0.231 | A | | | | YES | 0.180 | A | | | | YES |
| 5 | Rosemont Avenue & Washington Boulevard | AWSC [a] | Pasadena | Weekend Pre-Event | 0.205 | A | | [d] | | YES | 0.203 | A | | [d] | | YES |
| | | | | Weekend Post-Event | 0.196 | A | | | | YES | 0.147 | A | | | | YES |
| 6 | Rosemont Avenue & Seco Street | AWSC [a] | Pasadena | Weekend Pre-Event | 0.296 | A | | [d] | | YES | 0.315 | A | | [d] | | YES |
| | | | | Weekend Post-Event | 0.289 | A | | | | YES | 0.181 | A | | | | YES |
| 7 | Orange Grove Boulevard & Holly Street/I-210 Freeway WB Off-Ramp and EB On-Ramp | Signal | Pasadena | Weekend Pre-Event | 0.516 | A | 0.897 | D | 0.381 | YES | 0.523 | A | 0.901 | E | 0.378 | YES |
| | | | | Weekend Post-Event | 0.455 | A | 1.39 | F | 0.935 | YES | 0.459 | A | 1.394 | F | 0.935 | YES |
| 8 | Orange Grove Boulevard & SR-134 Freeway EB Off-Ramp and WB On-Ramp/Colorado Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.469 | A | 0.917 | E | 0.448 | YES | 0.539 | A | 0.897 | D | 0.358 | YES |
| | | | | Weekend Post-Event | 0.49 | A | 0.97 | E | 0.480 | YES | 0.521 | A | 1.003 | F | 0.482 | YES |
| 9 | North Arroyo Boulevard & I-210 Freeway WB Ramps | Signal | Altadena | Weekend Pre-Event | 0.402 | A | 0.416 | A | 0.014 | NO | 0.407 | A | 0.420 | A | 0.013 | NO |
| | | | | Weekend Post-Event | 0.364 | A | 0.709 | C | 0.345 | YES | 0.369 | A | 0.714 | C | 0.345 | YES |
| 10 | North Arroyo Boulevard & I-210 Freeway EB Ramps | Signal | Pasadena | Weekend Pre-Event | 0.346 | A | 0.464 | A | 0.118 | YES | 0.350 | A | 0.467 | A | 0.117 | YES |
| | | | | Weekend Post-Event | 0.333 | A | 0.597 | A | 0.264 | YES | 0.338 | A | 0.601 | B | 0.263 | YES |
| 11 | I-210 Freeway EB Ramps & Howard Street | TWSC [a] | Pasadena | Weekend Pre-Event | 0.228 | A | 0.266 | A | 0.038 | NO | 0.230 | A | 0.267 | A | 0.037 | NO |
| | | | | Weekend Post-Event | 0.204 | A | 0.204 | A | 0.000 | NO | 0.206 | A | 0.206 | A | 0.000 | NO |
| 12 | Lincoln Avenue & I-210 Freeway WB Ramps | Signal | Pasadena | Weekend Pre-Event | 0.496 | A | 0.502 | A | 0.006 | NO | 0.502 | A | 0.508 | A | 0.006 | NO |
| | | | | Weekend Post-Event | 0.504 | A | 0.547 | A | 0.043 | NO | 0.510 | A | 0.553 | A | 0.043 | NO |
| 13 | I-210 Freeway EB Ramps & Mountain Street | TWSC [a] | Pasadena | Weekend Pre-Event | 0.376 | A | 0.46 | A | 0.084 | YES | 0.399 | A | 0.460 | A | 0.061 | YES |
| | | | | Weekend Post-Event | 0.302 | A | 0.777 | C | 0.475 | YES | 0.320 | A | 0.795 | C | 0.475 | YES |
| 14 | I-210 Freeway WB Ramps & Mountain Street | TWSC [a] | Pasadena | Weekend Pre-Event | 0.356 | A | 0.703 | C | 0.347 | YES | 0.368 | A | 0.716 | C | 0.348 | YES |
| | | | | Weekend Post-Event | 0.298 | A | 0.416 | A | 0.118 | YES | 0.308 | A | 0.426 | A | 0.118 | YES |
| 15 | I-210 Freeway EB Ramp & Foothill Boulevard | Un-Controlled | La Canada | Weekend Pre-Event | 0.396 | A | 0.396 | A | 0.000 | NO | 0.400 | A | 0.400 | A | 0.000 | NO |
| | | | | Weekend Post-Event | 0.304 | A | 0.304 | A | 0.000 | NO | 0.307 | A | 0.307 | A | 0.000 | NO |
| 16 | I-210 Freeway WB Off-Ramp/Crown Avenue & Foothill Boulevard | Signal | La Canada | Weekend Pre-Event | 0.453 | A | 0.453 | A | 0.000 | NO | 0.457 | A | 0.457 | A | 0.000 | NO |
| | | | | Weekend Post-Event | 0.383 | A | 0.393 | A | 0.010 | NO | 0.387 | A | 0.398 | A | 0.011 | NO |

| | Intersection | Control | Jurisdiction | Peak Hour | Existing V/C | Existing LOS | Existing w/ Project V/C | Existing w/ Project LOS | V/C Change | Significant Impact | Future Pre-Project w/Ambient + Related Projects V/C | Future Pre-Project w/Ambient + Related Projects LOS | Future w/ Project V/C | Future w/ Project LOS | V/C Change | Significant Impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | Oak Grove Drive & Foothill Boulevard | Signal | La Canada | Weekend Pre-Event | 0.239 | A | 0.252 | A | 0.013 | NO | 0.243 | A | 0.256 | A | 0.013 | NO |
| | | | | Weekend Post-Event | 0.251 | A | 0.262 | A | 0.011 | NO | 0.252 | A | 0.263 | A | 0.011 | NO |
| 18 | I-210 Freeway EB Ramps & Berkshire Place | AWSC [a] | La Canada | Weekend Pre-Event | 0.265 | A | 0.358 | A | 0.093 | YES | 0.268 | A | 0.361 | A | 0.093 | YES |
| | | | | Weekend Post-Event | 0.247 | A | 0.247 | A | 0.000 | NO | 0.250 | A | 0.250 | A | 0.000 | NO |
| 19 | I-210 Freeway WB Ramps & Berkshire Place | TWSC [a] | La Canada | Weekend Pre-Event | 0.22 | A | 0.22 | A | 0.000 | NO | 0.222 | A | 0.222 | A | 0.000 | NO |
| | | | | Weekend Post-Event | 0.252 | A | 0.424 | A | 0.172 | YES | 0.253 | A | 0.426 | A | 0.173 | YES |
| 20 | Linda Vista Avenue & Highland Drive | AWSC [a] | Pasadena | Weekend Pre-Event | 0.21 | A | 0.377 | A | 0.167 | YES | 0.211 | A | 0.378 | A | 0.167 | YES |
| | | | | Weekend Post-Event | 0.198 | A | 0.336 | A | 0.138 | YES | 0.199 | A | 0.336 | A | 0.137 | YES |
| 21 | Linda Vista Avenue & Oak Grove Drive | TWSC [a] | Pasadena | Weekend Pre-Event | 0.212 | A | 0.212 | A | 0.000 | NO | 0.214 | A | 0.214 | A | 0.000 | NO |
| | | | | Weekend Post-Event | 0.209 | A | 0.381 | A | 0.172 | YES | 0.209 | A | 0.381 | A | 0.172 | YES |
| 22 | Windsor Avenue & Ventura Street | TWSC [a] | Altadena | Weekend Pre-Event | 0.366 | A | 0.366 | A | 0.000 | NO | 0.370 | A | 0.370 | A | 0.000 | NO |
| | | | | Weekend Post-Event | 0.378 | A | 0.378 | A | 0.000 | NO | 0.382 | A | 0.382 | A | 0.000 | NO |
| 23 | North Arroyo Boulevard/Windsor Avenue & Woodbury Road | Signal | Altadena | Weekend Pre-Event | 0.383 | A | 0.389 | A | 0.006 | NO | 0.386 | A | 0.392 | A | 0.006 | NO |
| | | | | Weekend Post-Event | 0.363 | A | 0.373 | A | 0.010 | NO | 0.366 | A | 0.377 | A | 0.011 | NO |
| 24 | Arroyo Boulevard & Lower Arroyo Park Entrance | TWSC [a] | Pasadena | Weekend Pre-Event | 0.193 | A | 0.364 | A | 0.171 | YES | 0.193 | A | 0.364 | A | 0.171 | YES |
| | | | | Weekend Post-Event | 0.178 | A | 0.211 | A | 0.033 | NO | 0.179 | A | 0.211 | A | 0.032 | NO |
| 25 | Arroyo Boulevard & California Boulevard | AWSC [a] | Pasadena | Weekend Pre-Event | 0.413 | A | 0.505 | A | 0.092 | YES | 0.420 | A | 0.509 | A | 0.089 | YES |
| | | | | Weekend Post-Event | 0.345 | A | 0.307 | A | -0.038 | NO | 0.349 | A | 0.310 | A | -0.039 | NO |
| 26 | Orange Grove Boulevard & California Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.723 | C | 0.838 | D | 0.115 | YES | 0.751 | C | 0.867 | D | 0.116 | YES |
| | | | | Weekend Post-Event | 0.959 | E | 1.916 | F | 0.957 | YES | 1.005 | F | 1.959 | F | 0.954 | YES |
| 27 | Arroyo Parkway & California Boulevard (CMP – Monitoring Station) [c] | Signal | Pasadena | Weekend Pre-Event | 0.657 | B | 0.921 | E | 0.264 | YES | 0.692 | B | 0.961 | E | 0.269 | YES |
| | | | | Weekend Post-Event | 0.702 | C | 1.209 | F | 0.507 | YES | 0.737 | C | 1.242 | F | 0.505 | YES |
| 28 | Pasadena Avenue & California Boulevard (CMP – Monitoring Station) | Signal | Pasadena | Weekend Pre-Event | 0.578 | A | 0.601 | B | 0.023 | NO | 0.583 | A | 0.609 | B | 0.026 | NO |
| | | | | Weekend Post-Event | 0.554 | A | 0.645 | B | 0.091 | YES | 0.561 | A | 0.651 | B | 0.090 | YES |
| 29 | St. John Avenue & California Boulevard (CMP – Monitoring Station) | Signal | Pasadena | Weekend Pre-Event | 0.556 | A | 0.599 | A | 0.043 | NO | 0.565 | A | 0.606 | B | 0.041 | NO |
| | | | | Weekend Post-Event | 0.522 | A | 0.792 | C | 0.270 | YES | 0.530 | A | 0.800 | C | 0.270 | YES |
| 30 | St. John Avenue & Colorado Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.421 | A | 0.469 | A | 0.048 | NO | 0.494 | A | 0.542 | A | 0.048 | NO |
| | | | | Weekend Post-Event | 0.431 | A | 0.55 | A | 0.119 | YES | 0.497 | A | 0.616 | B | 0.119 | YES |
| 31 | Pasadena Avenue & Union Street | Signal | Pasadena | Weekend Pre-Event | 0.265 | A | 0.421 | A | 0.156 | YES | 0.300 | A | 0.456 | A | 0.156 | YES |
| | | | | Weekend Post-Event | 0.279 | A | 0.513 | A | 0.234 | YES | 0.311 | A | 0.545 | A | 0.234 | YES |
| 32 | Pasadena Avenue & Colorado Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.372 | A | 0.475 | A | 0.103 | YES | 0.429 | A | 0.530 | A | 0.101 | YES |
| | | | | Weekend Post-Event | 0.369 | A | 0.44 | A | 0.071 | YES | 0.420 | A | 0.491 | A | 0.071 | YES |
| 33 | Pasadena Avenue & Green Street | Signal | Pasadena | Weekend Pre-Event | 0.304 | A | 0.315 | A | 0.011 | NO | 0.309 | A | 0.320 | A | 0.011 | NO |
| | | | | Weekend Post-Event | 0.319 | A | 0.319 | A | 0.000 | NO | 0.325 | A | 0.325 | A | 0.000 | NO |
| 34 | Fair Oaks Avenue & Walnut Street | Signal | Pasadena | Weekend Pre-Event | 0.535 | A | 0.666 | B | 0.131 | YES | 0.604 | B | 0.729 | C | 0.125 | YES |
| | | | | Weekend Post-Event | 0.668 | B | 1.052 | F | 0.384 | YES | 0.733 | C | 1.203 | F | 0.470 | YES |

| | Intersection | Control | Jurisdiction | Peak Hour | Existing V/C | Existing LOS | Existing w/ Project V/C | Existing w/ Project LOS | V/C Change | Significant Impact | Future Pre-Project w/Ambient + Related Projects V/C | Future Pre-Project w/Ambient + Related Projects LOS | Future w/ Project V/C | Future w/ Project LOS | V/C Change | Significant Impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | Fair Oaks Avenue & Union Street | Signal | Pasadena | Weekend Pre-Event | 0.525 | A | 0.63 | B | 0.105 | YES | 0.596 | A | 0.712 | C | 0.116 | YES |
| | | | | Weekend Post-Event | 0.558 | A | 0.716 | C | 0.158 | YES | 0.633 | B | 0.791 | C | 0.158 | YES |
| 36 | Fair Oaks Avenue & Colorado Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.603 | B | 0.771 | C | 0.168 | YES | 0.690 | B | 0.848 | D | 0.158 | YES |
| | | | | Weekend Post-Event | 0.626 | B | 0.952 | E | 0.326 | YES | 0.706 | C | 1.026 | F | 0.320 | YES |
| 37 | Fair Oaks Avenue & Green Street | Signal | Pasadena | Weekend Pre-Event | 0.516 | A | 0.675 | B | 0.159 | YES | 0.584 | A | 0.742 | C | 0.158 | YES |
| | | | | Weekend Post-Event | 0.553 | A | 0.781 | C | 0.228 | YES | 0.615 | B | 0.838 | D | 0.223 | YES |
| 38 | Arroyo Parkway & Colorado Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.582 | A | 0.764 | C | 0.182 | YES | 0.617 | B | 0.799 | C | 0.182 | YES |
| | | | | Weekend Post-Event | 0.576 | A | 0.758 | C | 0.182 | YES | 0.606 | B | 0.788 | C | 0.182 | YES |
| 39 | Lincoln Avenue & Woodbury Road [b] | Signal | Altadena | Weekend Pre-Event | 0.608 | B | 0.621 | B | 0.013 | NO | 0.616 | B | 0.629 | B | 0.013 | NO |
| | | | | Weekend Post-Event | 0.546 | A | 0.589 | A | 0.043 | NO | 0.553 | A | 0.596 | A | 0.043 | NO |
| 40 | Fair Oaks Avenue & Woodbury Road | Signal | Altadena | Weekend Pre-Event | 0.413 | A | 0.435 | A | 0.022 | NO | 0.438 | A | 0.460 | A | 0.022 | NO |
| | | | | Weekend Post-Event | 0.373 | A | 0.392 | A | 0.019 | NO | 0.393 | A | 0.412 | A | 0.019 | NO |
| 41 | Lincoln Avenue & Washington Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.287 | A | 0.338 | A | 0.051 | NO | 0.283 | A | 0.341 | A | 0.058 | NO |
| | | | | Weekend Post-Event | 0.26 | A | 0.429 | A | 0.169 | YES | 0.260 | A | 0.432 | A | 0.172 | YES |
| 42 | Fair Oaks Avenue & Washington Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.433 | A | 0.466 | A | 0.033 | NO | 0.496 | A | 0.513 | A | 0.017 | NO |
| | | | | Weekend Post-Event | 0.394 | A | 0.429 | A | 0.035 | NO | 0.444 | A | 0.479 | A | 0.035 | NO |
| 43 | Lincoln Avenue & Mountain Street/Seco Street | Signal | Pasadena | Weekend Pre-Event | 0.357 | A | 0.678 | B | 0.321 | YES | 0.361 | A | 0.682 | B | 0.321 | YES |
| | | | | Weekend Post-Event | 0.34 | A | 0.755 | C | 0.415 | YES | 0.345 | A | 0.759 | C | 0.414 | YES |
| 44 | Fair Oaks Avenue & Mountain Street | Signal | Pasadena | Weekend Pre-Event | 0.391 | A | 0.656 | B | 0.265 | YES | 0.437 | A | 0.702 | C | 0.265 | YES |
| | | | | Weekend Post-Event | 0.353 | A | 0.708 | C | 0.355 | YES | 0.387 | A | 0.742 | C | 0.355 | YES |
| 45 | St. John Avenue/I-210 Eastbound Off-Ramp & Walnut Street | Signal | Pasadena | Weekend Pre-Event | 0.224 | A | 0.344 | A | 0.120 | YES | 0.243 | A | 0.373 | A | 0.130 | YES |
| | | | | Weekend Post-Event | 0.216 | A | 0.301 | A | 0.085 | YES | 0.233 | A | 0.319 | A | 0.086 | YES |
| 46 | Pasadena Avenue/I-210 Westbound On-Ramp & Walnut Street | Signal | Pasadena | Weekend Pre-Event | 0.229 | A | 0.279 | A | 0.050 | NO | 0.230 | A | 0.280 | A | 0.050 | NO |
| | | | | Weekend Post-Event | 0.262 | A | 0.424 | A | 0.162 | YES | 0.264 | A | 0.426 | A | 0.162 | YES |
| 47 | Fair Oaks Avenue & Orange Grove Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.488 | A | 0.689 | B | 0.201 | YES | 0.531 | A | 0.729 | C | 0.198 | YES |
| | | | | Weekend Post-Event | 0.454 | A | 0.693 | B | 0.239 | YES | 0.503 | A | 0.737 | C | 0.234 | YES |
| 48 | Fair Oaks Avenue & Maple Street/I-210 Westbound Ramps/SR 134 Westbound Ramps | Signal | Pasadena | Weekend Pre-Event | 0.481 | A | 0.714 | C | 0.233 | YES | 0.566 | A | 0.788 | C | 0.222 | YES |
| | | | | Weekend Post-Event | 0.449 | A | 0.766 | C | 0.317 | YES | 0.525 | A | 0.837 | D | 0.312 | YES |
| 49 | Fair Oaks Avenue & Corson Street/SR 134 Eastbound Ramps | Signal | Pasadena | Weekend Pre-Event | 0.408 | A | 0.55 | A | 0.142 | YES | 0.470 | A | 0.600 | A | 0.130 | YES |
| | | | | Weekend Post-Event | 0.403 | A | 1.039 | F | 0.636 | YES | 0.455 | A | 1.093 | F | 0.638 | YES |
| 50 | Arroyo Parkway & Union Street | Signal | Pasadena | Weekend Pre-Event | 0.399 | A | 0.479 | A | 0.080 | YES | 0.415 | A | 0.494 | A | 0.079 | YES |
| | | | | Weekend Post-Event | 0.356 | A | 0.356 | A | 0.000 | NO | 0.369 | A | 0.369 | A | 0.000 | NO |
| 51 | Linda Vista Avenue & Holly Street | Signal | Pasadena | Weekend Pre-Event | 0.381 | A | 0.894 | D | 0.513 | YES | 0.385 | A | 0.897 | D | 0.512 | YES |
| | | | | Weekend Post-Event | 0.319 | A | 0.631 | B | 0.312 | YES | 0.323 | A | 0.632 | B | 0.309 | YES |
| 52 | Arroyo Parkway & Del Mar Boulevard [c] | Signal | Pasadena | Weekend Pre-Event | 0.552 | A | 0.757 | C | 0.205 | YES | 0.678 | B | 0.916 | E | 0.238 | YES |
| | | | | Weekend Post-Event | 0.552 | A | 0.771 | C | 0.219 | YES | 0.672 | B | 0.923 | E | 0.251 | YES |

| | Intersection | Control | Jurisdiction | Peak Hour | Existing V/C | Existing LOS | Existing w/ Project V/C | Existing w/ Project LOS | V/C Change | Significant Impact | Future Pre-Project w/Ambient + Related Projects V/C | Future Pre-Project w/Ambient + Related Projects LOS | Future w/ Project V/C | Future w/ Project LOS | V/C Change | Significant Impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | Fair Oaks Avenue & California Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.530 | A | 0.751 | C | 0.221 | YES | 0.585 | A | 0.810 | D | 0.225 | YES |
| | | | | Weekend Post-Event | 0.534 | A | 0.966 | E | 0.432 | YES | 0.584 | A | 1.012 | F | 0.428 | YES |
| 54 | Fair Oaks Avenue & Glenarm Street | Signal | Pasadena | Weekend Pre-Event | 0.595 | A | 0.801 | D | 0.206 | YES | 0.650 | B | 0.853 | D | 0.203 | YES |
| | | | | Weekend Post-Event | 0.564 | A | 1.822 | D | 0.258 | YES | 0.614 | B | 0.868 | D | 0.254 | YES |
| 55 | Arroyo Parkway & Glenarm Street [c] | Signal | Pasadena | Weekend Pre-Event | 0.621 | B | 0.831 | D | 0.210 | YES | 0.651 | B | 0.862 | D | 0.211 | YES |
| | | | | Weekend Post-Event | 0.628 | B | 0.885 | D | 0.257 | YES | 0.655 | B | 0.911 | E | 0.256 | YES |
| 56 | Fair Oaks Avenue & I-110 Southbound On-Ramp/State Street | Signal | South Pasadena | Weekend Pre-Event | 0.547 | A | 0.784 | C | 0.237 | YES | 0.600 | A | 0.837 | D | 0.237 | YES |
| | | | | Weekend Post-Event | 0.530 | A | 1.061 | F | 0.531 | YES | 0.579 | A | 1.103 | F | 0.524 | YES |
| 57 | Fair Oaks Avenue & I-110 Northbound Off-Ramp/Grevalia Street | Signal | South Pasadena | Weekend Pre-Event | 0.713 | C | 1.145 | F | 0.432 | YES | 0.805 | D | 1.237 | F | 0.432 | YES |
| | | | | Weekend Post-Event | 0.722 | C | 0.773 | C | 0.051 | YES | 0.805 | D | 0.857 | D | 0.052 | YES |
| 58 | Orange Grove Avenue & I-110 Southbound Ramps | Signal | South Pasadena | Weekend Pre-Event | 0.333 | A | 0.478 | A | 0.145 | YES | 0.351 | A | 0.491 | A | 0.140 | YES |
| | | | | Weekend Post-Event | 0.343 | A | 0.343 | A | 0.000 | NO | 0.359 | A | 0.359 | A | 0.000 | NO |
| 59 | Orange Grove Avenue & I-110 Northbound Ramps | Signal | South Pasadena | Weekend Pre-Event | 0.427 | A | 0.612 | B | 0.185 | YES | 0.449 | A | 0.635 | B | 0.186 | YES |
| | | | | Weekend Post-Event | 0.452 | A | 0.452 | A | 0.000 | NO | 0.472 | A | 0.472 | A | 0.000 | NO |
| 60 | Orange Grove Avenue & Del Mar Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.509 | A | 0.877 | D | 0.368 | YES | 0.539 | A | 0.917 | E | 0.378 | YES |
| | | | | Weekend Post-Event | 0.504 | A | 1.295 | F | 0.791 | YES | 0.530 | A | 1.306 | F | 0.786 | YES |
| 61 | St. John Avenue & Del Mar Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.306 | A | 0.358 | A | 0.052 | NO | 0.394 | A | 0.446 | A | 0.052 | YES |
| | | | | Weekend Post-Event | 0.291 | A | 0.291 | A | 0.000 | NO | 0.374 | A | 0.374 | A | 0.000 | NO |
| 62 | Pasadena Avenue & Del Mar Boulevard | Signal | Pasadena | Weekend Pre-Event | 0.315 | A | 0.384 | A | 0.069 | YES | 0.399 | A | 0.452 | A | 0.053 | YES |
| | | | | Weekend Post-Event | 0.312 | A | 0.312 | A | 0.000 | NO | 0.388 | A | 0.388 | A | 0.000 | NO |
| 63 | Fair Oaks Avenue & Del Mar Boulevard | Signal | South Pasadena | Weekend Pre-Event | 0.479 | A | 0.661 | B | 0.182 | YES | 0.605 | B | 0.787 | C | 0.182 | YES |
| | | | | Weekend Post-Event | 0.456 | A | 0.711 | C | 0.255 | YES | 0.573 | A | 0.836 | D | 0.263 | YES |
| 64 | Orange Grove Avenue & Columbia Street | Signal | South Pasadena | Weekend Pre-Event | 0.488 | A | 0.608 | B | 0.120 | YES | 0.501 | A | 0.622 | B | 0.121 | YES |
| | | | | Weekend Post-Event | 0.428 | A | 0.672 | B | 0.244 | YES | 0.441 | A | 0.683 | B | 0.242 | YES |
| 65 | Pasadena Avenue/Fremont Avenue & Columbia Street | Signal | South Pasadena | Weekend Pre-Event | 0.545 | A | 0.609 | B | 0.064 | YES | 0.553 | A | 0.616 | B | 0.063 | YES |
| | | | | Weekend Post-Event | 0.529 | A | 0.629 | B | 0.100 | YES | 0.535 | A | 0.637 | B | 0.102 | YES |
| 66 | Fair Oaks Avenue & Columbia Street | Signal | South Pasadena | Weekend Pre-Event | 0.459 | A | 0.650 | B | 0.191 | YES | 0.513 | A | 0.700 | B | 0.187 | YES |
| | | | | Weekend Post-Event | 0.446 | A | 0.805 | D | 0.359 | YES | 0.495 | A | 0.852 | D | 0.357 | YES |

*Note:*
*The base traffic flow capacity was assumed to be 1,700 vehicles per hour per lane, based on consultation with the City of Pasadena staff.*
*Source: Rose Bowl Traffic Study, Fehr & Peers, 2012*
*[a] Intersection is controlled by stop signs and uses HCM unsignalized methodology.*
*[b] Intersection was under construction at the time of data collection.*
*[c] Capacity reductions were taken to moves affected by the loss in green time associated with Metro Gold line trains.*
*[d] Since this study intersection is completely reconfigured for game days and operation is controlled by traffic control officers, a comparison of the without project V/C and level of service would not accurately convey the changes that occur at this intersection as a result of the project.*

**Table 4.0-6**
**Street Segment Impact Results – Alternative 2 (Reduced Attendance Alternative)**

| Location | Existing ADT Volumes | | Existing with Project ADT Volumes | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday with Project | | | | Weekend with Project | | | |
| | Weekday Volume | Weekend Volume | Added Volume | Total Volume | %ADT Increase | Sig Impact? | Added Volume | Total Volume | %ADT Increase | Sig Impact? |
| 1 Linda Vista Ave south of Mount Vernon Place | 3,912 | 2,618 | 1,677 | 5,589 | 43% | YES | 1,554 | 4,172 | 59% | YES |
| 2 Linda Vista Ave south of Charles Street | 8,719 | 4,633 | 6,709 | 15,428 | 77% | YES | 6,216 | 10,849 | 134% | YES |
| 3 Linda Vista Ave south of Seco St | 13,050 | 8,297 | | [2] | | YES | | [2] | | YES |
| 4 Salvia Canyon Rd east of Linda Vista Ave | 1,297 | 846 | | [2] | | YES | | [2] | | YES |
| 5 Rosemont Ave north of West Washington Blvd | 2,325 | 1,506 | | [2] | | YES | | [2] | | YES |
| 6 West Washington Blvd east of North Arroyo Blvd | 1,482 | 890 | | [2] | | YES | | [2] | | YES |
| 7 North Arroyo Blvd east of Rosemont Ave [1] | 733 | 534 | | [2] | | YES | | [2] | | YES |
| 8 Seco St east of Rosemont Ave | 5,179 | 3,386 | | [2] | | YES | | [2] | | YES |
| 9 Rosemont Ave south of Seco St | 4,459 | 3,427 | | [2] | | YES | | [2] | | YES |
| 10 Oak Grove Dr south of Foothill Blvd | 13,735 | 4,914 | 373 | 14,108 | 3% | NO | 345 | 5,259 | 7% | YES |
| 11 Windsor Ave south of Mountain View St | 9,521 | 5,777 | 373 | 9,894 | 4% | NO | 345 | 6,122 | 6% | YES |
| 12 Arroyo Blvd north of Arbor St | 2,522 | 2,561 | 2,236 | 4,758 | 89% | YES | 2,072 | 4,633 | 81% | YES |
| 13 Arroyo Blvd north of California Blvd | 2,265 | 2,258 | 2,236 | 4,501 | 99% | YES | 2,072 | 4,330 | 92% | YES |
| 14 Foothill Blvd west of Oak Grove Dr | 7,310 | 3,693 | 373 | 7,683 | 5% | YES | 345 | 4,038 | 9% | YES |
| 15 Oak Grove Dr west of Windsor Ave | 4,718 | 3,224 | 186 | 4,904 | 4% | NO | 173 | 3,397 | 5% | YES |
| 16 Lincoln Ave south of Woodbury Rd | 22,233 | 17,530 | 335 | 22,568 | 2% | NO | 311 | 17,841 | 2% | NO |
| 17 Glen Ave south of Woodbury Rd | 2,005 | 1,621 | 37 | 2,042 | 2% | NO | 35 | 1,656 | 2% | NO |
| 18 Lida St west of Linda Vista Ave | 6,772 | 2,372 | 373 | 7,145 | 6% | YES | 345 | 2,717 | 15% | YES |
| 19 Washington Blvd west of Fair Oaks Ave | 11,142 | 8,151 | 373 | 11,515 | 3% | NO | 345 | 8,496 | 4% | NO |

| Location | Existing ADT Volumes | | Existing with Project ADT Volumes | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday with Project | | | | Weekend with Project | | | |
| | Weekday Volume | Weekend Volume | Added Volume | Total Volume | %ADT Increase | Sig Impact? | Added Volume | Total Volume | %ADT Increase | Sig Impact? |
| 20 Cypress Ave south of Orange Grove Blvd | 613 | 352 | 37 | 650 | 6% | YES | 35 | 387 | 10% | YES |
| 21 Lincoln Ave south of Villa St | 3,888 | 1,901 | 708 | 4,596 | 18% | YES | 656 | 2,557 | 35% | YES |
| 22 Sunset Ave south of Mountain St | 1,287 | 1,047 | 37 | 1,324 | 3% | NO | 35 | 1,082 | 3% | NO |
| 23 Orange Grove Blvd west of Fair Oaks Ave | 13,619 | 10,371 | 335 | 13,954 | 2% | NO | 311 | 10,682 | 3% | NO |
| 24 Arroyo Pkwy south of Colorado Blvd | 16,302 | 12,480 | 1,491 | 17,793 | 9% | YES | 1,381 | 13,861 | 11% | YES |
| 25 Pasadena Ave south of Glenarm St | 26,204 | 18,581 | 373 | 26,577 | 1% | NO | 345 | 18,926 | 2% | NO |
| 26 Orange Grove Blvd south of Colorado Blvd | 23,866 | 19,634 | 5,964 | 29,830 | 25% | YES | 5,525 | 25,159 | 28% | YES |
| 27 Colorado Blvd west of San Rafael Ave | 16,347 | 11,864 | 373 | 16,720 | 2% | NO | 345 | 12,209 | 3% | NO |

*Note:*
*[1] Trips along this segment represent shuttle trips between the Rose Bowl and the Parsons site*
*[2] Segment is reconfigured as a controlled access route to/from Rose Bowl parking lots on event days. Segment is considered significantly impacted.*
*Source: Rose Bowl Traffic Study, Fehr & Peers, 2012*

## Alternative 3 – Reduced Non-NFL Displacement Events

Under Alternative 3, the Arroyo Seco Public Lands Ordinance would be amended to allow nine additional events per calendar year at the Rose Bowl Stadium. However, the events would be limited to non-NFL events such as soccer matches and concerts. Attendance would be 75,000 patrons similar to the proposed project.

### *Air Quality*

Under Alternative 3, the number and nature of events would change, but the total attendance for each event would remain the same as for the proposed project. Air quality impacts are analyzed on a per day basis (unlike greenhouse gas emissions, which are analyzed on an annual basis). Therefore the nature of the event itself and the number of events do not have a measureable effect on air quality, as each individual event would continue to exceed the threshold and remain significant. Impacts under Alternative 3 would be similar to the proposed project.

### *Greenhouse Gas*

Under Alternative 3 it is assumed that the number of events would change, but the number of attendees would remain the same as for the proposed project. Greenhouse gas emissions for the proposed project were assessed by calculating the total emissions from a single event, then multiplying this total by 13. Consequently, if the number of events allowed per year is reduced from 13 to nine, the annual GHG emissions would be reduced by approximately one-third of those estimated for the proposed project. Emissions estimated using this methodology would total approximately 4,650 $MTCO_2e$, or 1.2 $MTCO_2e$/SP. This total is below the significance threshold of 4.8 $MTCO_2e$/SP, and therefore the impacts under Alternative 3 would also be less than significant. This total is also slightly less than GHG emissions associated with the proposed project. Therefore, impacts associated with Alternative 3 would be less than the proposed project.

### *Land Use*

Under this Alternative, the Arroyo Seco Public Lands ordinance would be amended to allow nine additional displacement events per year. However, the events would be limited to non-NFL events. The project vicinity, which includes residential communities on three sides, is affected on existing game days or during other displacement events at the stadium. In particular, many communities that surround the Rose Bowl experience increased traffic that often disrupts the neighborhood on game days. These communities experience increased vehicle congestion (including shuttle buses). Street closures are frequent and vary depending on traffic on a game day. However, while the increased traffic, shuttle buses, and pedestrian activity may be an annoyance on game days, the effects are generally temporary beginning immediately before games and lasting until 1 to 2 hours after events. However, as events would occur less frequently, this Alternative would reduce potential impacts compared to the proposed project.

### *Noise*

Under Alternative 3, fewer displacement events would be permitted at the Rose Bowl stadium by allowing up to nine non-NFL events per year. Attendance at these events would be the same as for the proposed project. As with the proposed project, event noise would not be expected to result in significant noise impacts to noise-sensitive uses near the Rose Bowl stadium. Limiting the number of displacement events would result in fewer exceedances of City of Pasadena noise level standards as a result of a decrease in event days and associated vehicular traffic. The reduced number of events would result in fewer occasions when City noise level standards are exceeded compared to the proposed project. However, this alternative would be expected to result in temporary increases in ambient noise levels

above City of Pasadena noise level standards. Events could be concerts, international soccer, or other events that could produce substantial noise levels periodically. Therefore, impacts under this alternative would be similar to the proposed project.

### *Public Services*

Under Alternative 3, nine additional non-NFL events would occur at the Rose Bowl Stadium on an annual basis. These events could be international soccer events, other sporting events, or concerts. Police protection would be required at each event for crowd management and traffic management. Fire and emergency personnel services may also be necessary. Under this alternative, the number of events that would require public services would be reduced, however, the number of personnel that would be required on event days would be similar to the proposed project as, under this alternative, the attendance would be similar to the proposed project. Because the number of personnel required on event days would be similar to the proposed project, impacts under Alternative 3 would also be less than significant. Impact would be similar under this Alternative.

### *Recreation*

Under Alternative 3, the Arroyo Seco Public Lands Ordinance would be amended to allow an additional nine non-NFL events at the Rose Bowl Stadium per year. These events would not be NFL events, but could be concerts, international soccer matches, or other large attendance events. As with the proposed project, during events certain recreational use at the Rose Bowl would be inaccessible. Many users such as joggers, walkers, bikers and equestrian users of the loop would avoid the Rose Bowl area altogether due to the increased traffic and activity. In addition, Brookside Golf Course would be inaccessible due to its use as a primary parking facility. The Aquatic Center would also be closed to users, as all parking surrounding the Rose Bowl Stadium would be utilized for the Rose Bowl Stadium events. Under this Alternative, the number of events that would occur per year would be reduced from 25 to 22 (assuming the addition of nine events rather than 12 under the proposed project). This would increase the number of days by three on which the Rose Bowl area would be available to recreational users without restriction compared to the proposed project.

Additionally, under this Alternative, the additional displacement events would be non-NFL events. These non-NFL events could occur on weekends or weekdays at any time of the year. Unlike the proposed project, Alternative 3 would not result in a concentration of displacement events during football season and specifically on Sundays. Under Alternative 3, displacement events could be scheduled throughout the year, including outside of football season. Therefore, because events would not be clustered during a specific time of year and because fewer events would occur, Alternative 3 would result in less impact compared to the proposed project.

### *Transportation and Traffic*

This alternative would reduce the number of proposed displacement events from 12 to nine (compared to the proposed project) but would not affect the maximum number of spectators for each game. Therefore, this alternative would not affect the number of trips that would be generated by an event; the trip generation estimates for this alternative would be the same as those of the proposed project. While the same number of intersections would be significantly impacted under this alternative, the frequency of these events would be lower. Further, as this alternative would include different types of events (concerts, sporting events, etc.) the transportation demand management measures included as part of the project (and used under this alternative) may be less effective than under the proposed project. With the regular occurrence of NFL games, many patrons, such as season ticket holders who regularly attend games, would become familiar with the traffic patterns, parking alternatives (such as shuttles) and alternatives to driving to the Rose Bowl Stadium. Therefore, although the overall number of occurrences of the impact over the 5-year period would be lower, impacts at individual intersections could be greater. However, as the number of total number of events would be decreased traffic related impacts associated with this alternative would be less than the proposed project.

### *Conclusion*

As discussed above, Alternative 3 would result in fewer impacts to recreation and traffic and the overall number of days on which impacts occur would be reduced.

## ENVIRONMENTALLY SUPERIOR ALTERNATIVE

*State CEQA Guidelines* Section 15126.6(e)(2) requires that and "environmentally superior" alternative be selected among the alternatives that are evaluated in the EIR. In general, the environmentally superior Alternative is the alternative that would be expected to generate the fewest adverse impacts. If the No Project Alternative is identified as environmentally superior, then another environmentally superior alternative shall be identified among the other alternatives. **Table 4.1-7** summarizes the effects of the alternatives.

The No Project Alternative would not create any new impacts related to transportation, air quality, greenhouse gas emissions, recreation, land use, and noise.

Both the Reduced Attendance Alternative (Alternative 2) and the Reduced Non-NFL Alternative (Alternative 3), would reduce impacts associated with greenhouse gas emissions and land use. Alternative 2, the Reduced Attendance Alternative, would reduce significant impacts at intersections and street segments (compared to the proposed project). Alternative 2 would also reduce PM10 impacts associated with the proposed project. Therefore, Alternative 2 is the environmentally superior alternative.

## COMPARISON OF ALTERNATIVES

**Table 4-7**
**Comparison of Alternatives to the Proposed Project**

| Environmental Issue Area | No Project | Reduced Attendance Alternative | Reduced Non-NFL Alternative |
|---|---|---|---|
| Air Quality | Less | Less, would reduce significant impacts to PM10 | Similar, but still significant |
| Greenhouse Gas | Less | Less, Less than significant | Less, Less than significant |
| Land Use | Less | Less, less than significant | Less, less than significant |
| Noise | Less | Similar, still significant | Similar, still significant |
| Public Services | Less | Similar, less than significant | Similar, less than significant |
| Recreation | Less | Similar, still significant | Less, still significant |
| Transportation, Circulation and Parking | Less | Less, less than significant at additional intersections/street segments | Less, all intersections would still be significant |

*Source: Impact Sciences, 2012*