Traffic Analysis Data as presented in the Project Report dated September 2008

## Traffic

The purpose of the following traffic analysis was intended to first of all demonstrate operational deficiencies Perris Boulevard will experience should there be no improvement or widening implemented to handle near-term and future traffic demands. Traffic operational analysis was performed by utilizing methodology provided in accordance to the 2000 Highway Capacity Manual (HCM). The Highway Capacity Software 2000 (HCS2000) by McTrans Center was utilized for the analysis and calculations of signalized and unsignalized intersections.

Secondly, traffic study and analysis also assist in determining the number of travel lanes needed in the future. Three improvement scenarios were analyzed for this purpose involving; (1) No-Build option (two lane), (2) four-lane, and (3) six lane configurations. Operational analysis of the signalized intersections was also performed respectively for the aforementioned scenarios at Perris Boulevard and Ironwood Avenue, Kalmia Avenue, Manzanita Avenue and Pico Vista Way which has been planned for signalization in the near future, as part of this project. The City's Transportation Engineering Division uses Average Daily Traffic (ADT) thresholds as shown below to evaluate Level-of-Service (LOS) along Perris Boulevard in-between Ironwood, Kalmia, Pico Vista Way, and Manzanita Avenue.

**Table 1.0, City of Moreno Valley's Average Daily Traffic (ADT) Threshold**

| Type of Roadway | Arterial Level of Service (LOS) | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | E |
| Two-lane divided (Existing) | 11,250 | 13,125 | 15,000 | 16,875 | 18,750 |
| Four-lane divided (Preferred) | 22,500 | 26,300 | 30,000 | 33,800 | 37,500 |
| Six-lane divided | 33,900 | 39,400 | 45,000 | 50,600 | 56,300 |

Presently, Perris Boulevard is striped for one lane of traffic in each direction throughout much of its alignment with a double yellow or two-way left turn lane in the middle as space permits. At its intersection with Ironwood Avenue, the road widens and is able to accommodate two travel lanes northbound and southbound with a dedicated left-turn pocket for southbound traffic.

Existing and projected traffic volumes were furnished by Urban Crossroads for 2011 (Near Term), 2030 (Long Term), and 2050 (Build-Out) years. These traffic volumes were used as inputs to determine existing and projected level of service conditions along Perris Boulevard and at the intersections between Ironwood and Manzanita Avenue.

**Table 1.1** summarizes the operational levels-of-service associated with the No-Build/two-lane scenario. In this scenario, Perris Boulevard is assumed to remain as a two-lane highway facility within the project limits. As shown, Average Daily Traffic along Perris Boulevard is expected to increase by 2011 and cause a failing Level-of-Service (LOS) "E" by 2030 and LOS "F" by the Build Out Year of 2050 relative to the Average Daily Traffic (ADT) thresholds established by the City's Transportation Engineering Division. This outcome validates the need to improve and widen Perris Boulevard and increase its capacity to handle future traffic demands.

**Table 1.1**
**Level of Service Summary**

| Perris Blvd Segment | Existing | | Year 2011 No Build | | Year 2030 No Build | | Year 2050 No Build | |
|---|---|---|---|---|---|---|---|---|
| | ADT | LOS | ADT | LOS | ADT | LOS | ADT | LOS |
| Ironwood to Kalmia | 17,674 | E | 18,137 | E | 20,336 | F | 22,514 | F |
| Kalmia to Pico Vista | 15,650 | D | 16,142 | D | 18,479 | E | 20,792 | F |
| Pico Vista to Manzanita | 17,868 | E | 18,251 | E | 20,072 | F | 21,876 | F |

Note:
ADT = Average Daily Traffic
LOS = Level of Service

Next, Perris Boulevard widening scenarios to a four and six-lane facilities were evaluated. **Table 1.2** summarizes results from applying the four-lane scenario while **Table 1.3** summarizes operational results from applying the six-lane scenario.

**Table 1.2**
**Level of Service Summary**

| Segment | Existing | | Yr. 2011 4 Lanes Option | | Yr. 2030 4 Lanes Option | | Yr. 2050 4 Lanes Option | |
|---|---|---|---|---|---|---|---|---|
| | ADT | LOS | ADT | LOS | ADT | LOS | ADT | LOS |
| Kalm to Iron | 17,674 | A | 18,137 | A | 20,336 | A | 22,514 | B |
| Pico to Kalm | 15,650 | A | 16,142 | A | 18,479 | A | 20,792 | A |
| Manz to Pico | 17,868 | A | 18,251 | A | 20,072 | A | 21,876 | A |

Note:
ADT = Average Daily Traffic
LOS = Level of Service
**Street Legend**: **Iron** = Ironwood,, **Kalm** = Kalmia, **Pico** = Pico Vista, **Manz** = Manzanita

As shown in Table 1.2, widening Perris Boulevard to a minimum of two-lanes for each direction of traffic improves near and future levels of service to LOS "B" or better by 2030 and the build-out year of 2050.

**Table 1.3**
**Level of Service Summary**

| Segment | Existing | | Yr. 2011 6 Lanes Option | | Yr. 2030 6 Lanes Option | | Yr. 2050 6 Lanes Option | |
|---|---|---|---|---|---|---|---|---|
| | ADT | LOS | ADT | LOS | ADT | LOS | ADT | LOS |
| Kalm to Iron | 17,674 | A | 18,137 | A | 20,336 | A | 22,514 | A |
| Pico to Kalm | 15,650 | A | 16,142 | A | 18,479 | A | 20,792 | A |
| Manz to Pico | 17,868 | A | 18,251 | A | 20,072 | A | 21,876 | A |

Note:
ADT = Average Daily Traffic
LOS = Level of Service
**Street Legend**: **Iron** = Ironwood,, **Kalm** = Kalmia, **Pico** = Pico Vista, **Manz** = Manzanita

It should be noted that if Perris Boulevard were to be widened to six lanes,striping transitions are needed at the north and south ends of the project limits. Currently, Perris Boulevard has a four-lane configuration between the its intersection with Manzanita Avenue and the joining point of the proposed improvements.

The City's Transportation Engineering Division accepts an LOS C or better for corridor capacity analysis according to its Circulation Element of the General Plan. Tables 1.1 through 1.3 clearly reveal the ability of Perris Boulevard to handle existing and future traffic demands as a four-lane arterial based on this criteria. Therefore, improving this segment of Perris Boulevard to a six-lane facility as currently specified in the City's Standard Plan is not justifiable.

In addition to capacity evaluations along Perris Boulevard, operational analysis at existing and future signalized intersections was also performed. The same three planning scenarios were applied, except at Perris Boulevard/Ironwood and Perris Boulevard/Manzanita Avenue intersections where a four-lane scenario is the existing configuration. The locations involved intersections along Perris Boulevard with Ironwood, Kalmia Avenue, Pico Vista Way, and Manzanita Avenue. Results of the analysis are summarized in the following **Tables 1.4A** through **1.4D**. Operational levels of service (LOS) at the intersections were analyzed with methodology consistent with the Highway Capacity Manual (HCM) 2000 edition and the HCS2000 software using turning count volumes compiled and provided by Urban Crossroads.

**Tables 1.4A** and **1.4B** compare traffic operational results between the existing, four-lane configuration at Perris Boulevard/Ironwood Avenue and Perris Boulevard/Manzanita Avenue versus six lane configuration at the intersections. LOS do not improve by much

between the four and six-lane scenarios. The intersections' overall delays during PM peak hours, however, are significantly reduced. They are projected to decrease from 81 seconds to 53 seconds at Ironwood Avenue and from 105 seconds to 47 seconds at Manzanita Avenue by Year 2030.

**Table 1.4A**
**Level of Service Summary**
**Ironwood Avenue Intersection**

| Condition | AM | | PM | |
|---|---|---|---|---|
| | Int. Delay | LOS | Int. Delay | LOS |
| **Four-Lane (Existing at Intersection)** | | | | |
| **Existing** | 49.6 | D | 52.5 | D |
| **Yr 2011** | 50.4 | D | 55 | D |
| **Yr 2030** | 56.5 | E | 81.4 | F |
| **Yr 2050** | 68.6 | E | 128.2 | F |
| **With 6 Lanes on Perris Blvd.-Alt. Scenario** | | | | |
| **Yr 2011** | 45 | D | 47.4 | D |
| **Yr 2030** | 47 | D | 53.1 | D |
| **Yr 2050** | 50.4 | D | 62.2 | E |

Note:
Int. Delay = Intersection Delay in seconds
Yr = Year

**Table 1.4B**
**Level of Service Summary**
**Manzanita Avenue Intersection**

| Condition | AM | | PM | |
|---|---|---|---|---|
| | Int. Delay | LOS | Int. Delay | LOS |
| **Four-Lane (Existing at Intersection)** | | | | |
| **Existing** | 42.3 | D | 47.1 | D |
| **Yr 2011** | 42.8 | D | 51.1 | D |
| **Yr 2030** | 47.8 | D | 104.5 | F |
| **Yr 2050** | 77.5 | E | 193.6 | F |
| **With 6 Lanes on Perris Blvd- Alt. Scenario** | | | | |
| **Yr 2011** | 39.7 | D | 40.6 | D |
| **Yr 2030** | 41.1 | D | 47 | D |
| **Yr 2050** | 43.8 | D | 83.3 | F |

Note:
Int. Delay = Intersection Delay in seconds
Yr = Year

The City's Transportation Engineering Division accepts a LOS "D" or better for operational analysis at signalized or unsignalized intersections. Based on this criteria, the two intersections will be operating at an unacceptable LOS through the year 2030 and 2050 during PM peak hour. A follow-up analysis indicates that the intersections' level of service can be improved from LOS "E" to "D" at Perris Boulevard and Ironwood Avenue when an additional left turn lane is introduced for the northbound-to-westbound traffic movement. Similarly, the operational level of service at Perris Boulevard and Manzanita Avenue can be improved from LOS "F" to "D" when an east-to-northbound left turn lane is added to the west leg of the Manzanita Avenue intersection coupled with the introduction of an exclusive southbound right turn lane on Perris Boulevard. The necessity for these suggested improvements needs to be reevaluated in the year 2030 and 2050 respectively based on actual traffic demands.

**Table 1.4C** summarizes a similar analysis for the intersection of Perris Boulevard and Kalmia Avenue. At this intersection, the analysis includes an exclusive left-turn pocket option for southbound left-turning traffic on Kalmia Avenue. The results reveal the need for this exclusive left-turn pocket. Without the exclusive left-turn pocket, a failing LOS "F" is expected for the intersection during AM peak hours. The addition the exclusive left-turn pocket on Kalmia is recommended through restriping the existing pavement

area. The suggested improvement will help reduce intersection delays to stay between 20 to 26 seconds versus 36 to 41 seconds for any of the horizon years, resulting in an acceptable LOS "C".

**Table 1.4C**
**Level of Service Summary**
**Kalmia Ave. Intersection**

| Condition | Without Turn Pocket on Kalmia | | | | With Turn Pocket on Kalmia | | | |
|---|---|---|---|---|---|---|---|---|
| | AM | | PM | | AM | | PM | |
| | Int. Delay | LOS | Int. Delay | LOS | Int. Delay | LOS | Int. Delay | LOS |
| **Existing Condition ( Two-Lane Facility at Perris Blvd/Kalmia Ave)** | | | | | | | | |
| **Existing** | 187 | F | 44.2 | D | 187 | F | 44.2 | D |
| **Yr 2011** | 190.6 | F | 47.5 | D | 190.6 | F | 47.5 | D |
| **Yr 2030** | 201.1 | F | 85.2 | F | 201.1 | F | 85.2 | F |
| **Yr 2050** | 210.5 | F | 156.4 | F | 210.5 | F | 156.4 | F |
| **4 Lanes on Perris Blvd.** | | | | | | | | |
| **Yr 2011** | 168.1 | F | 37.6 | D | 25.4 | C | 21.6 | C |
| **Yr 2030** | 172.3 | F | 40 | D | 25.4 | C | 23.5 | C |
| **Yr 2050** | 175.5 | F | 44.9 | D | 25.5 | C | 26.5 | C |
| **6 Lanes on Perris Blvd.** | | | | | | | | |
| **Yr 2011** | 166.5 | F | 36.3 | D | 23.8 | C | 20.2 | C |
| **Yr 2030** | 170.5 | F | 37.7 | D | 23.6 | C | 21.2 | C |
| **Yr 2050** | 173.4 | F | 40.7 | D | 23.4 | C | 22.4 | C |

Note:
Int. Delay = Intersection Delay in seconds.
Yr = Year

**Table 1.4D** summarizes the intersection operation analysis of Pico Vista Way and Perris Boulevard which is currently unsignalized. LOS of an unsignalized intersection is determined by the amount of delay experienced on the minor approach which in this case is the westbound traffic flow coming from Pico Vista Way. Based on volume, signalizing the intersection is not warranted. The City's Transportation Engineering division recommends signalization, however, for safety reasons. As shown in Attachment A, Pico Vista Way joins the curvilinear portion of Perris Boulevard at a skew. This condition significantly limits intersection's sight distance and restricts motorists' ability to see oncoming traffic from any direction as they approach Perris Boulevard on Pico Vista Way.

Results of the analysis are as shown below. As expected, signalization of the intersection increases the amount of delay for individual vehicles as represented by the "worsening" LOS.

| Table 1.4D<br>Level of Service Summary<br>Pico Vista Way Intersection | | | | |
|---|---|---|---|---|
| **Condition** | **AM** | | **PM** | |
| | **App. Delay** | **LOS** | **App. Delay** | **LOS** |
| **No Build Option (Exist. Perris Blvd as a two-lane highway facility)** | | | | |
| **Existing** | 8.3 | A | 7.9 | A |
| **Yr 2011** | 8.4 | A | 8.1 | A |
| **Yr 2030** | 8.6 | A | 9.1 | A |
| **Yr 2050** | 8.9 | A | 12.7 | B |
| **4 Lanes on Perris Blvd. (Signalized)** | | | | |
| **Yr 2011** | 22.2 | C | 19.4 | B |
| **Yr 2030** | 22.3 | C | 21.7 | C |
| **Yr 2050** | 22.4 | C | 30.4 | C |
| **6 Lanes on Perris Blvd. (Signalized)** | | | | |
| **Condition** | **Int. Delay** | **LOS** | **Int. Delay** | **LOS** |
| **Yr 2011** | 20.3 | C | 17.8 | B |
| **Yr 2030** | 20.2 | C | 19.2 | B |
| **Yr 2050** | 20.1 | C | 22.9 | C |
| Note:<br>App. Delay = Approach Delay in seconds.<br>Int. Delay = Intersection Delay in seconds.<br>Yr = Year | | | | |

On another note, offset distances between Pico Vista Way, Fran Lou Drive and Robin Lane do not meet the 150-foot minimum spacing criteria established by AASHTO, a nationwide authority in roadway geometric design guidelines. Therefore, they pose serious safety concerns. These concerns can be mitigated, however, by constructing a raised median along the curvilinear portion of Perris Boulevard where these intersections are currently located.

# ATTACHMENT G

Traffic Survey and Analysis

# Existing and Forecasted Volumes

**TABLE 1**

**DAILY TRAFFIC VOLUMES WITH PROJECT**

| ROADWAY | FROM | TO | VOLUME | | | | | | GROWTH | % GROWTH |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | COUNT (NB/EB) | COUNT (SB/WB) | COUNT (TOTAL) | BUILDOUT (NB/EB) | BUILDOUT (SB/WB) | BUILDOUT (TOTAL) | | |
| Perris Bl. | Manzanita Av. | n/o Manzanita Av. | 7,275 | 7,286 | 14,561 | 12,341 | 12,360 | 24,701 | 10,140 | 70% |
| Perris Bl. | Manzanita Av. | Pico Vista Wy. | 8,810 | 8,864 | 17,674 | 11,223 | 11,291 | 22,514 | 4,840 | 27% |
| Perris Bl. | Pico Vista Wy. | Kalmia Av. | 7,125 | 8,525 | 15,650 | 9,466 | 11,326 | 20,792 | 5,142 | 33% |
| Perris Bl. | Kalmia Av. | Ironwood Av. | 8,976 | 8,892 | 17,868 | 10,989 | 10,887 | 21,876 | 4,008 | 22% |
| Perris Bl. | Ironwood Av. | s/o Ironwood Av. | 13,184 | 11,848 | 25,032 | 16,091 | 14,461 | 30,552 | 5,520 | 22% |
| Manzanita Av. | Perris Bl. | e/o Perris Bl. | 431 | 500 | 931 | 905 | 1,050 | 1,955 | 1,024 | 110% |
| Manzanita Av. | Perris Bl. | w/o Perris Bl. | 1,644 | 1,656 | 3,300 | 3,687 | 3,713 | 7,400 | 4,100 | 124% |
| Pico Vista Wy. | Perris Bl. | e/o Perris Bl. | 56 | 200 | 256 | 62 | 220 | 282 | 26 | 10% |
| Kalmia Av. | Perris Bl. | e/o Perris Bl. | 1,904 | 1,852 | 3,756 | 2,094 | 2,037 | 4,132 | 376 | 10% |
| Ironwood Av. | Perris Bl. | e/o Perris Bl. | 6,306 | 6,494 | 12,800 | 6,937 | 7,143 | 14,080 | 1,280 | 10% |
| Ironwood Av. | Perris Bl. | w/o Perris Bl. | 6,219 | 6,844 | 13,063 | 6,841 | 7,528 | 14,369 | 1,306 | 10% |

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**TABLE 3**

**TRUCK PERCENT (OVERALL)**

| ROADWAY | FROM | TO | PERCENT | | | | |
|---|---|---|---|---|---|---|---|
| | | | AUTO | 2 AXLE | 3 AXLE | 4+ AXLE | TOTAL |
| Perris Bl. | Manzanita Av. | n/o Manzanita Av. | 98.2 | 1.6 | 0.1 | 0.1 | 100.0 |
| Perris Bl. | Manzanita Av. | Pico Vista Wy. | 96.2 | 3.2 | 0.2 | 0.4 | 100.0 |
| Perris Bl. | Pico Vista Wy. | Kalmia Av. | 96.2 | 3.2 | 0.2 | 0.4 | 100.0 |
| Perris Bl. | Kalmia Av. | Ironwood Av. | 96.3 | 3.2 | 0.2 | 0.3 | 100.0 |
| Perris Bl. | Ironwood Av. | s/o Ironwood Av. | 98.1 | 1.4 | 0.2 | 0.3 | 100.0 |
| Manzanita Av. | Perris Bl. | e/o Perris Bl. | 97.4 | 2.2 | 0.3 | 0.1 | 100.0 |
| Manzanita Av. | Perris Bl. | w/o Perris Bl. | 97.4 | 2.2 | 0.3 | 0.1 | 100.0 |
| Pico Vista Wy. | Perris Bl. | e/o Perris Bl. | 97.4 | 2.2 | 0.3 | 0.1 | 100.0 |
| Kalmia Av. | Perris Bl. | e/o Perris Bl. | 97.4 | 2.2 | 0.3 | 0.1 | 100.0 |
| Ironwood Av. | Perris Bl. | e/o Perris Bl. | 97.4 | 2.2 | 0.3 | 0.1 | 100.0 |
| Ironwood Av. | Perris Bl. | w/o Perris Bl. | 97.4 | 2.2 | 0.3 | 0.1 | 100.0 |

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**TABLE 5**

**NIGHTTIME (7PM-7AM) TRUCK PERCENT**

| ROADWAY | FROM | TO | PERCENT | | | | |
|---|---|---|---|---|---|---|---|
| | | | AUTO | 2 AXLE | 3 AXLE | 4+ AXLE | TOTAL |
| Perris Bl. | Manzanita Av. | n/o Manzanita Av. | 98.3 | 1.5 | 0.1 | 0.1 | 100.0 |
| Perris Bl. | Manzanita Av. | Pico Vista Wy. | 96.7 | 2.7 | 0.3 | 0.3 | 100.0 |
| Perris Bl. | Pico Vista Wy. | Kalmia Av. | 96.7 | 2.7 | 0.3 | 0.3 | 100.0 |
| Perris Bl. | Kalmia Av. | Ironwood Av. | 96.8 | 2.6 | 0.3 | 0.3 | 100.0 |
| Perris Bl. | Ironwood Av. | s/o Ironwood Av. | 98.3 | 1.2 | 0.1 | 0.4 | 100.0 |
| Manzanita Av. | Perris Bl. | e/o Perris Bl. | 97.2 | 2.4 | 0.3 | 0.1 | 100.0 |
| Manzanita Av. | Perris Bl. | w/o Perris Bl. | 97.2 | 2.4 | 0.3 | 0.1 | 100.0 |
| Pico Vista Wy. | Perris Bl. | e/o Perris Bl. | 97.2 | 2.4 | 0.3 | 0.1 | 100.0 |
| Kalmia Av. | Perris Bl. | e/o Perris Bl. | 97.2 | 2.4 | 0.3 | 0.1 | 100.0 |
| Ironwood Av. | Perris Bl. | e/o Perris Bl. | 97.2 | 2.4 | 0.3 | 0.1 | 100.0 |
| Ironwood Av. | Perris Bl. | w/o Perris Bl. | 97.2 | 2.4 | 0.3 | 0.1 | 100.0 |

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TABLE 6

INTERSECTION FORECAST GROWTH

| | | EXISTING COUNT | | BUILDOUT FORECAST | | GROWTH | | %GROWTH | |
|---|---|---|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | AM | PM | AM | PM | AM | PM | AM | PM |
| Perris Bl. (NS) & Ironwood Av. (EW) | | | | | | | | | |
| Northbound | Left | 173 | 256 | 248 | 330 | 75 | 74 | 43% | 29% |
| | Through | 495 | 483 | 544 | 849 | 49 | 366 | 10% | 76% |
| | Right | 160 | 172 | 176 | 189 | 16 | 17 | 10% | 10% |
| Southbound | Left | 113 | 136 | 124 | 149 | 11 | 13 | 10% | 10% |
| | Through | 519 | 662 | 709 | 987 | 190 | 325 | 37% | 49% |
| | Right | 135 | 72 | 154 | 80 | 19 | 8 | 14% | 11% |
| Eastbound | Left | 88 | 69 | 97 | 100 | 9 | 31 | 10% | 45% |
| | Through | 220 | 208 | 242 | 366 | 22 | 158 | 10% | 76% |
| | Right | 174 | 236 | 289 | 345 | 115 | 109 | 66% | 46% |
| Westbound | Left | 185 | 140 | 203 | 154 | 18 | 14 | 10% | 10% |
| | Through | 284 | 175 | 332 | 243 | 48 | 68 | 17% | 39% |
| | Right | 150 | 105 | 165 | 143 | 15 | 38 | 10% | 36% |

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TABLE 7

INTERSECTION FORECASTS (INTERIM YEARS)

| | | EXISTING COUNT | | 2011 | | 2030 | | BUILDOUT FORECAST | |
|---|---|---|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | AM | PM | AM | PM | AM | PM | AM | PM |
| Perris Bl. (NS) & Ironwood Av. (EW) | | | | | | | | | |
| Northbound | Left | 173 | 256 | 180 | 263 | 214 | 297 | 248 | 330 |
| | Through | 495 | 483 | 500 | 518 | 522 | 684 | 544 | 849 |
| | Right | 160 | 172 | 162 | 174 | 169 | 181 | 176 | 189 |
| Southbound | Left | 113 | 136 | 114 | 137 | 119 | 143 | 124 | 149 |
| | Through | 519 | 662 | 537 | 693 | 624 | 841 | 709 | 987 |
| | Right | 135 | 72 | 137 | 73 | 145 | 76 | 154 | 80 |
| Eastbound | Left | 88 | 69 | 89 | 72 | 93 | 86 | 97 | 100 |
| | Through | 220 | 208 | 222 | 223 | 232 | 295 | 242 | 366 |
| | Right | 174 | 236 | 185 | 246 | 237 | 296 | 289 | 345 |
| Westbound | Left | 185 | 140 | 187 | 141 | 195 | 148 | 203 | 154 |
| | Through | 284 | 175 | 289 | 181 | 310 | 212 | 332 | 243 |
| | Right | 150 | 105 | 151 | 109 | 158 | 126 | 165 | 143 |

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# Perris Boulevard/Kalmia Avenue Intersection LOS Analysis

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (BO 2050 PM) - [6 lanes improvement]*

## Capacity Analysis

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | TR | | | LTR | | | LT | R | L | TR | |
| Adj. flow rate | | 0 | | | 99 | | | 976 | 154 | 66 | 1124 | |
| Satflow rate | | 1863 | | | 176 | | | 5085 | 1583 | 1770 | 5085 | |
| Lost time | | 2.0 | | | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Green ratio | | 0.30 | | | 0.30 | | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Lane group cap. | | 567 | | | 54 | | | 1769 | 551 | 385 | 3051 | |
| v/c ratio | | 0.00 | | | 1.83 | | | 0.55 | 0.28 | 0.17 | 0.37 | |
| Flow ratio | | 0.00 | | | 0.56 | | | 0.19 | 0.10 | 0.04 | 0.22 | |
| Crit. lane group | | N | | | Y | | | Y | N | Y | N | |
| Sum flow ratios | 0.79 | | | | | | | | | | | |
| Lost time/cycle | 15.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.91 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | TR | | | LTR | | | LT | R | L | TR | |
| Adj. flow rate | | 0 | | | 99 | | | 976 | 154 | 66 | 1124 | |
| Lane group cap. | | 567 | | | 54 | | | 1769 | 551 | 385 | 3051 | |
| v/c ratio | | 0.00 | | | 1.83 | | | 0.55 | 0.28 | 0.17 | 0.37 | |
| Green ratio | | 0.30 | | | 0.30 | | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Unif. delay d1 | | 27.8 | | | 40.0 | | | 30.3 | 27.1 | 36.6 | 11.8 | |
| Delay factor k | | 0.50 | | | 0.50 | | | 0.50 | 0.50 | 0.50 | 0.50 | |
| Increm. delay d2 | | 0.0 | | | 437.8 | | | 1.2 | 1.3 | 1.0 | 0.3 | |
| PF factor | | 1.000 | | | 1.000 | | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Control delay | | 27.8 | | | 477.8 | | | 31.5 | 28.4 | 37.5 | 12.2 | |
| Lane group LOS | | C | | | F | | | C | C | D | B | |
| Apprch. delay | | | | 477.8 | | | 31.1 | | | 13.6 | | |
| Approach LOS | | | | F | | | C | | | B | | |
| Intersec. delay | 40.7 | | | Intersection LOS | | | | | | D | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (IY 2030 PM) - [6 lanes improvement]*

## Capacity Analysis

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 94 | 767 | 147 | 62 | 960 |
| Satflow rate | 1863 | 191 | 5085 | 1583 | 1770 | 5085 |
| Lost time | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | 567 | 58 | 1769 | 551 | 385 | 3051 |
| v/c ratio | 0.00 | 1.62 | 0.43 | 0.27 | 0.16 | 0.31 |
| Flow ratio | 0.00 | 0.49 | 0.15 | 0.09 | 0.04 | 0.19 |
| Crit. lane group | N | Y | N | N | N | Y |
| Sum flow ratios | 0.68 | | | | | |
| Lost time/cycle | 11.00 | | | | | |
| Critical v/c ratio | 0.75 | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 94 | 767 | 147 | 62 | 960 |
| Lane group cap. | 567 | 58 | 1769 | 551 | 385 | 3051 |
| v/c ratio | 0.00 | 1.62 | 0.43 | 0.27 | 0.16 | 0.31 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | 27.8 | 40.0 | 28.8 | 27.0 | 36.5 | 11.3 |
| Delay factor k | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | 0.0 | 344.9 | 0.8 | 1.2 | 0.9 | 0.3 |
| PF factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | 27.8 | 384.9 | 29.6 | 28.1 | 37.4 | 11.6 |
| Lane group LOS | C | F | C | C | D | B |
| Apprch. delay | | 384.9 | 29.3 | | 13.2 | |
| Approach LOS | | F | C | | B | |
| Intersec. delay | 37.7 | Intersection LOS | | | D | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (IY 2011 PM) - [6 lanes improvement]*

## Capacity Analysis

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 91 | 556 | 141 | 58 | 795 |
| Satflow rate | 1863 | 203 | 5085 | 1583 | 1770 | 5085 |
| Lost time | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | 567 | 62 | 1769 | 551 | 385 | 3051 |
| v/c ratio | 0.00 | 1.47 | 0.31 | 0.26 | 0.15 | 0.26 |
| Flow ratio | 0.00 | 0.45 | 0.11 | 0.09 | 0.03 | 0.16 |
| Crit. lane group | N | Y | N | N | N | Y |
| Sum flow ratios | 0.60 | | | | | |
| Lost time/cycle | 11.00 | | | | | |
| Critical v/c ratio | 0.67 | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 91 | 556 | 141 | 58 | 795 |
| Lane group cap. | 567 | 62 | 1769 | 551 | 385 | 3051 |
| v/c ratio | 0.00 | 1.47 | 0.31 | 0.26 | 0.15 | 0.26 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | 27.8 | 40.0 | 27.5 | 26.8 | 36.4 | 10.9 |
| Delay factor k | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | 0.0 | 279.2 | 0.5 | 1.1 | 0.8 | 0.2 |
| PF factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | 27.8 | 319.2 | 27.9 | 28.0 | 37.2 | 11.1 |
| Lane group LOS | C | F | C | C | D | B |
| Apprch. delay | | 319.2 | 27.9 | | 12.9 | |
| Approach LOS | | F | C | | B | |
| Intersec. delay | 36.3 | Intersection LOS | | | D | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (BO 2050 PM) - [4 lanes improvement]*

## Capacity Analysis

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 99 | 976 | 154 | 66 | 1124 |
| Satflow rate | 1863 | 176 | 3539 | 1583 | 1770 | 3539 |
| Lost time | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | 567 | 54 | 1231 | 551 | 385 | 2123 |
| v/c ratio | 0.00 | 1.83 | 0.79 | 0.28 | 0.17 | 0.53 |
| Flow ratio | 0.00 | 0.56 | 0.28 | 0.10 | 0.04 | 0.32 |
| Crit. lane group | N | Y | N | N | N | Y |
| Sum flow ratios | 0.88 | | | | | |
| Lost time/cycle | 11.00 | | | | | |
| Critical v/c ratio | 0.97 | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 99 | 976 | 154 | 66 | 1124 |
| Lane group cap. | 567 | 54 | 1231 | 551 | 385 | 2123 |
| v/c ratio | 0.00 | 1.83 | 0.79 | 0.28 | 0.17 | 0.53 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | 27.8 | 40.0 | 33.8 | 27.1 | 36.6 | 13.5 |
| Delay factor k | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | 0.0 | 437.8 | 5.3 | 1.3 | 1.0 | 0.9 |
| PF factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | 27.8 | 477.8 | 39.1 | 28.4 | 37.5 | 14.4 |
| Lane group LOS | C | F | D | C | D | B |
| Apprch. delay | | 477.8 | 37.6 | | 15.7 | |
| Approach LOS | | F | D | | B | |
| Intersec. delay | 44.9 | Intersection LOS | | | D | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (IY 2030 PM) - [4 lanes improvement]*

## Capacity Analysis

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 94 | 767 | 147 | 62 | 960 |
| Satflow rate | 1863 | 191 | 3539 | 1583 | 1770 | 3539 |
| Lost time | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | 567 | 58 | 1231 | 551 | 385 | 2123 |
| v/c ratio | 0.00 | 1.62 | 0.62 | 0.27 | 0.16 | 0.45 |
| Flow ratio | 0.00 | 0.49 | 0.22 | 0.09 | 0.04 | 0.27 |
| Crit. lane group | N | Y | N | N | N | Y |
| Sum flow ratios | 0.76 | | | | | |
| Lost time/cycle | 11.00 | | | | | |
| Critical v/c ratio | 0.84 | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 94 | 767 | 147 | 62 | 960 |
| Lane group cap. | 567 | 58 | 1231 | 551 | 385 | 2123 |
| v/c ratio | 0.00 | 1.62 | 0.62 | 0.27 | 0.16 | 0.45 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | 27.8 | 40.0 | 31.2 | 27.0 | 36.5 | 12.6 |
| Delay factor k | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | 0.0 | 344.9 | 2.4 | 1.2 | 0.9 | 0.7 |
| PF factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | 27.8 | 384.9 | 33.6 | 28.1 | 37.4 | 13.3 |
| Lane group LOS | C | F | C | C | D | B |
| Apprch. delay | | 384.9 | 32.7 | | 14.8 | |
| Approach LOS | | F | C | | B | |
| Intersec. delay | 40.0 | Intersection LOS | | | D | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (IY 2011 PM) - [4 lanes improvement]*

## Capacity Analysis

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | *TR* | | | *LTR* | | | *LT* | *R* | *L* | *TR* | |
| Adj. flow rate | | *0* | | | *91* | | | *556* | *141* | *58* | *795* | |
| Satflow rate | | *1863* | | | *203* | | | *3539* | *1583* | *1770* | *3539* | |
| Lost time | | *2.0* | | | *2.0* | | | *2.0* | *2.0* | *2.0* | *2.0* | |
| Green ratio | | *0.30* | | | *0.30* | | | *0.35* | *0.35* | *0.22* | *0.60* | |
| Lane group cap. | | *567* | | | *62* | | | *1231* | *551* | *385* | *2123* | |
| v/c ratio | | *0.00* | | | *1.47* | | | *0.45* | *0.26* | *0.15* | *0.37* | |
| Flow ratio | | *0.00* | | | *0.45* | | | *0.16* | *0.09* | *0.03* | *0.22* | |
| Crit. lane group | | *N* | | | *Y* | | | *N* | *N* | *N* | *Y* | |
| Sum flow ratios | *0.67* | | | | | | | | | | | |
| Lost time/cycle | *11.00* | | | | | | | | | | | |
| Critical v/c ratio | *0.74* | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | *TR* | | | *LTR* | | | *LT* | *R* | *L* | *TR* | |
| Adj. flow rate | | *0* | | | *91* | | | *556* | *141* | *58* | *795* | |
| Lane group cap. | | *567* | | | *62* | | | *1231* | *551* | *385* | *2123* | |
| v/c ratio | | *0.00* | | | *1.47* | | | *0.45* | *0.26* | *0.15* | *0.37* | |
| Green ratio | | *0.30* | | | *0.30* | | | *0.35* | *0.35* | *0.22* | *0.60* | |
| Unif. delay d1 | | *27.8* | | | *40.0* | | | *29.0* | *26.8* | *36.4* | *11.9* | |
| Delay factor k | | *0.50* | | | *0.50* | | | *0.50* | *0.50* | *0.50* | *0.50* | |
| Increm. delay d2 | | *0.0* | | | *279.2* | | | *1.2* | *1.1* | *0.8* | *0.5* | |
| PF factor | | *1.000* | | | *1.000* | | | *1.000* | *1.000* | *1.000* | *1.000* | |
| Control delay | | *27.8* | | | *319.2* | | | *30.2* | *28.0* | *37.2* | *12.4* | |
| Lane group LOS | | *C* | | | *F* | | | *C* | *C* | *D* | *B* | |
| Apprch. delay | | | | *319.2* | | | *29.8* | | | *14.1* | | |
| Approach LOS | | | | *F* | | | *C* | | | *B* | | |
| Intersec. delay | *37.6* | | | Intersection LOS | | | | | *D* | | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd Street Widening - Perris & Kalmia (BO 2050 PM)*

## Capacity Analysis

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 99 | 976 | 154 | 66 | 1124 |
| Satflow rate | 1863 | 176 | 1863 | 1583 | 1770 | 1863 |
| Lost time | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | 567 | 54 | 648 | 551 | 385 | 1118 |
| v/c ratio | 0.00 | 1.83 | 1.51 | 0.28 | 0.17 | 1.01 |
| Flow ratio | 0.00 | 0.56 | 0.52 | 0.10 | 0.04 | 0.60 |
| Crit. lane group | N | Y | N | N | N | Y |
| Sum flow ratios | 1.17 | | | | | |
| Lost time/cycle | 11.00 | | | | | |
| Critical v/c ratio | 1.29 | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | TR | LTR | LT | R | L | TR |
| Adj. flow rate | 0 | 99 | 976 | 154 | 66 | 1124 |
| Lane group cap. | 567 | 54 | 648 | 551 | 385 | 1118 |
| v/c ratio | 0.00 | 1.83 | 1.51 | 0.28 | 0.17 | 1.01 |
| Green ratio | 0.30 | 0.30 | 0.35 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | 27.8 | 40.0 | 37.5 | 27.1 | 36.6 | 23.0 |
| Delay factor k | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | 0.0 | 437.8 | 235.8 | 1.3 | 1.0 | 28.2 |
| PF factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | 27.8 | 477.8 | 273.3 | 28.4 | 37.5 | 51.2 |
| Lane group LOS | C | F | F | C | D | D |
| Apprch. delay | | 477.8 | 239.9 | | 50.5 | |
| Approach LOS | | F | F | | D | |
| Intersec. delay | 156.4 | Intersection LOS | | | F | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd Street Widening - Perris & Kalmia (IY 2030 PM)*

## Capacity Analysis

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | TR | | | LTR | | | LT | R | L | TR | |
| Adj. flow rate | | 0 | | | 94 | | | 767 | 147 | 62 | 960 | |
| Satflow rate | | 1863 | | | 191 | | | 1863 | 1583 | 1770 | 1863 | |
| Lost time | | 2.0 | | | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Green ratio | | 0.30 | | | 0.30 | | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Lane group cap. | | 567 | | | 58 | | | 648 | 551 | 385 | 1118 | |
| v/c ratio | | 0.00 | | | 1.62 | | | 1.18 | 0.27 | 0.16 | 0.86 | |
| Flow ratio | | 0.00 | | | 0.49 | | | 0.41 | 0.09 | 0.04 | 0.52 | |
| Crit. lane group | | N | | | Y | | | N | N | N | Y | |
| Sum flow ratios | 1.01 | | | | | | | | | | | |
| Lost time/cycle | 11.00 | | | | | | | | | | | |
| Critical v/c ratio | 1.11 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | TR | | | LTR | | | LT | R | L | TR | |
| Adj. flow rate | | 0 | | | 94 | | | 767 | 147 | 62 | 960 | |
| Lane group cap. | | 567 | | | 58 | | | 648 | 551 | 385 | 1118 | |
| v/c ratio | | 0.00 | | | 1.62 | | | 1.18 | 0.27 | 0.16 | 0.86 | |
| Green ratio | | 0.30 | | | 0.30 | | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Unif. delay d1 | | 27.8 | | | 40.0 | | | 37.5 | 27.0 | 36.5 | 19.0 | |
| Delay factor k | | 0.50 | | | 0.50 | | | 0.50 | 0.50 | 0.50 | 0.50 | |
| Increm. delay d2 | | 0.0 | | | 344.9 | | | 97.8 | 1.2 | 0.9 | 8.6 | |
| PF factor | | 1.000 | | | 1.000 | | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Control delay | | 27.8 | | | 384.9 | | | 135.3 | 28.1 | 37.4 | 27.6 | |
| Lane group LOS | | C | | | F | | | F | C | D | C | |
| Apprch. delay | | | | 384.9 | | | 118.0 | | | 28.2 | | |
| Approach LOS | | | | F | | | F | | | C | | |
| Intersec. delay | 85.2 | | | Intersection LOS | | | | | | F | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd Street Widening - Perris & Kalmia (IY 2011 PM)*

## Capacity Analysis

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | *TR* | *LTR* | *LT* | *R* | *L* | *TR* |
| Adj. flow rate | *0* | *91* | *556* | *141* | *58* | *795* |
| Satflow rate | *1863* | *203* | *1863* | *1583* | *1770* | *1863* |
| Lost time | *2.0* | *2.0* | *2.0* | *2.0* | *2.0* | *2.0* |
| Green ratio | *0.30* | *0.30* | *0.35* | *0.35* | *0.22* | *0.60* |
| Lane group cap. | *567* | *62* | *648* | *551* | *385* | *1118* |
| v/c ratio | *0.00* | *1.47* | *0.86* | *0.26* | *0.15* | *0.71* |
| Flow ratio | *0.00* | *0.45* | *0.30* | *0.09* | *0.03* | *0.43* |
| Crit. lane group | *N* | *Y* | *N* | *N* | *N* | *Y* |
| Sum flow ratios | *0.88* | | | | | |
| Lost time/cycle | *11.00* | | | | | |
| Critical v/c ratio | *0.97* | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | | SB | |
|---|---|---|---|---|---|---|
| Lane group | *TR* | *LTR* | *LT* | *R* | *L* | *TR* |
| Adj. flow rate | *0* | *91* | *556* | *141* | *58* | *795* |
| Lane group cap. | *567* | *62* | *648* | *551* | *385* | *1118* |
| v/c ratio | *0.00* | *1.47* | *0.86* | *0.26* | *0.15* | *0.71* |
| Green ratio | *0.30* | *0.30* | *0.35* | *0.35* | *0.22* | *0.60* |
| Unif. delay d1 | *27.8* | *40.0* | *34.9* | *26.8* | *36.4* | *16.0* |
| Delay factor k | *0.50* | *0.50* | *0.50* | *0.50* | *0.50* | *0.50* |
| Increm. delay d2 | *0.0* | *279.2* | *13.8* | *1.1* | *0.8* | *3.8* |
| PF factor | *1.000* | *1.000* | *1.000* | *1.000* | *1.000* | *1.000* |
| Control delay | *27.8* | *319.2* | *48.7* | *28.0* | *37.2* | *19.9* |
| Lane group LOS | *C* | *F* | *D* | *C* | *D* | *B* |
| Apprch. delay | | *319.2* | *44.5* | | *21.1* | |
| Approach LOS | | *F* | *D* | | *C* | |
| Intersec. delay | *47.5* | Intersection LOS | | | *D* | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd Street Widening - Perris & Kalmia (EX PM)*

## Capacity Analysis

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | *TR* | | | *LTR* | | | *LT* | *R* | *L* | *TR* | |
| Adj. flow rate | | *0* | | | *90* | | | *512* | *140* | *57* | *760* | |
| Satflow rate | | *1863* | | | *209* | | | *1863* | *1583* | *1770* | *1863* | |
| Lost time | | *2.0* | | | *2.0* | | | *2.0* | *2.0* | *2.0* | *2.0* | |
| Green ratio | | *0.30* | | | *0.30* | | | *0.35* | *0.35* | *0.22* | *0.60* | |
| Lane group cap. | | *567* | | | *64* | | | *648* | *551* | *385* | *1118* | |
| v/c ratio | | *0.00* | | | *1.41* | | | *0.79* | *0.25* | *0.15* | *0.68* | |
| Flow ratio | | *0.00* | | | *0.43* | | | *0.27* | *0.09* | *0.03* | *0.41* | |
| Crit. lane group | | *N* | | | *Y* | | | *N* | *N* | *N* | *Y* | |
| Sum flow ratios | *0.84* | | | | | | | | | | | |
| Lost time/cycle | *11.00* | | | | | | | | | | | |
| Critical v/c ratio | *0.93* | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | *TR* | | | *LTR* | | | *LT* | *R* | *L* | *TR* | |
| Adj. flow rate | | *0* | | | *90* | | | *512* | *140* | *57* | *760* | |
| Lane group cap. | | *567* | | | *64* | | | *648* | *551* | *385* | *1118* | |
| v/c ratio | | *0.00* | | | *1.41* | | | *0.79* | *0.25* | *0.15* | *0.68* | |
| Green ratio | | *0.30* | | | *0.30* | | | *0.35* | *0.35* | *0.22* | *0.60* | |
| Unif. delay d1 | | *27.8* | | | *40.0* | | | *33.7* | *26.8* | *36.4* | *15.5* | |
| Delay factor k | | *0.50* | | | *0.50* | | | *0.50* | *0.50* | *0.50* | *0.50* | |
| Increm. delay d2 | | *0.0* | | | *253.1* | | | *9.5* | *1.1* | *0.8* | *3.3* | |
| PF factor | | *1.000* | | | *1.000* | | | *1.000* | *1.000* | *1.000* | *1.000* | |
| Control delay | | *27.8* | | | *293.1* | | | *43.2* | *27.9* | *37.2* | *18.9* | |
| Lane group LOS | | *C* | | | *F* | | | *D* | *C* | *D* | *B* | |
| Apprch. delay | | | | *293.1* | | | *39.9* | | | *20.2* | | |
| Approach LOS | | | | *F* | | | *D* | | | *C* | | |
| Intersec. delay | *44.2* | | | Intersection LOS | | | | | *D* | | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (BO 2050 PM) - [6 lanes improvement, pocket]*

## Capacity Analysis

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | LT | R | L | TR | |
| Adj. flow rate | | | | 71 | 28 | | 976 | 154 | 66 | 1124 | |
| Satflow rate | | | | 1770 | 1583 | | 5085 | 1583 | 1770 | 5085 | |
| Lost time | | | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Green ratio | | | | 0.30 | 0.30 | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Lane group cap. | | | | 539 | 482 | | 1769 | 551 | 385 | 3051 | |
| v/c ratio | | | | 0.13 | 0.06 | | 0.55 | 0.28 | 0.17 | 0.37 | |
| Flow ratio | | | | 0.04 | 0.02 | | 0.19 | 0.10 | 0.04 | 0.22 | |
| Crit. lane group | | | | Y | N | | Y | N | Y | N | |
| Sum flow ratios | 0.27 | | | | | | | | | | |
| Lost time/cycle | 15.00 | | | | | | | | | | |
| Critical v/c ratio | 0.31 | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | LT | R | L | TR | |
| Adj. flow rate | | | | 71 | 28 | | 976 | 154 | 66 | 1124 | |
| Lane group cap. | | | | 539 | 482 | | 1769 | 551 | 385 | 3051 | |
| v/c ratio | | | | 0.13 | 0.06 | | 0.55 | 0.28 | 0.17 | 0.37 | |
| Green ratio | | | | 0.30 | 0.30 | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Unif. delay d1 | | | | 29.0 | 28.3 | | 30.3 | 27.1 | 36.6 | 11.8 | |
| Delay factor k | | | | 0.50 | 0.50 | | 0.50 | 0.50 | 0.50 | 0.50 | |
| Increm. delay d2 | | | | 0.5 | 0.2 | | 1.2 | 1.3 | 1.0 | 0.3 | |
| PF factor | | | | 1.000 | 1.000 | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Control delay | | | | 29.5 | 28.6 | | 31.5 | 28.4 | 37.5 | 12.2 | |
| Lane group LOS | | | | C | C | | C | C | D | B | |
| Apprch. delay | | | | 29.2 | | | 31.1 | | 13.6 | | |
| Approach LOS | | | | C | | | C | | B | | |
| Intersec. delay | 22.4 | | | Intersection LOS | | | | | C | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (IY 2030 PM) - [6 lanes improvement, pocket]*

## Capacity Analysis

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | LT | R | L | TR | |
| Adj. flow rate | | | | 67 | 27 | | 767 | 147 | 62 | 960 | |
| Satflow rate | | | | 1770 | 1583 | | 5085 | 1583 | 1770 | 5085 | |
| Lost time | | | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Green ratio | | | | 0.30 | 0.30 | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Lane group cap. | | | | 539 | 482 | | 1769 | 551 | 385 | 3051 | |
| v/c ratio | | | | 0.12 | 0.06 | | 0.43 | 0.27 | 0.16 | 0.31 | |
| Flow ratio | | | | 0.04 | 0.02 | | 0.15 | 0.09 | 0.04 | 0.19 | |
| Crit. lane group | | | | Y | N | | N | N | N | Y | |
| Sum flow ratios | 0.23 | | | | | | | | | | |
| Lost time/cycle | 11.00 | | | | | | | | | | |
| Critical v/c ratio | 0.25 | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | LT | R | L | TR | |
| Adj. flow rate | | | | 67 | 27 | | 767 | 147 | 62 | 960 | |
| Lane group cap. | | | | 539 | 482 | | 1769 | 551 | 385 | 3051 | |
| v/c ratio | | | | 0.12 | 0.06 | | 0.43 | 0.27 | 0.16 | 0.31 | |
| Green ratio | | | | 0.30 | 0.30 | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Unif. delay d1 | | | | 28.9 | 28.3 | | 28.8 | 27.0 | 36.5 | 11.3 | |
| Delay factor k | | | | 0.50 | 0.50 | | 0.50 | 0.50 | 0.50 | 0.50 | |
| Increm. delay d2 | | | | 0.5 | 0.2 | | 0.8 | 1.2 | 0.9 | 0.3 | |
| PF factor | | | | 1.000 | 1.000 | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Control delay | | | | 29.4 | 28.5 | | 29.6 | 28.1 | 37.4 | 11.6 | |
| Lane group LOS | | | | C | C | | C | C | D | B | |
| Apprch. delay | | | | 29.1 | | | 29.3 | | 13.2 | | |
| Approach LOS | | | | C | | | C | | B | | |
| Intersec. delay | 21.2 | | | Intersection LOS | | | | | C | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (IY 2011 PM) - [6 lanes improvement, pocket]*

## Capacity Analysis

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | LT | R | L | TR | |
| Adj. flow rate | | | | 65 | 26 | | 556 | 141 | 58 | 795 | |
| Satflow rate | | | | 1770 | 1583 | | 5085 | 1583 | 1770 | 5085 | |
| Lost time | | | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Green ratio | | | | 0.30 | 0.30 | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Lane group cap. | | | | 539 | 482 | | 1769 | 551 | 385 | 3051 | |
| v/c ratio | | | | 0.12 | 0.05 | | 0.31 | 0.26 | 0.15 | 0.26 | |
| Flow ratio | | | | 0.04 | 0.02 | | 0.11 | 0.09 | 0.03 | 0.16 | |
| Crit. lane group | | | | Y | N | | N | N | N | Y | |
| Sum flow ratios | 0.19 | | | | | | | | | | |
| Lost time/cycle | 11.00 | | | | | | | | | | |
| Critical v/c ratio | 0.21 | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | LT | R | L | TR | |
| Adj. flow rate | | | | 65 | 26 | | 556 | 141 | 58 | 795 | |
| Lane group cap. | | | | 539 | 482 | | 1769 | 551 | 385 | 3051 | |
| v/c ratio | | | | 0.12 | 0.05 | | 0.31 | 0.26 | 0.15 | 0.26 | |
| Green ratio | | | | 0.30 | 0.30 | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Unif. delay d1 | | | | 28.9 | 28.3 | | 27.5 | 26.8 | 36.4 | 10.9 | |
| Delay factor k | | | | 0.50 | 0.50 | | 0.50 | 0.50 | 0.50 | 0.50 | |
| Increm. delay d2 | | | | 0.5 | 0.2 | | 0.5 | 1.1 | 0.8 | 0.2 | |
| PF factor | | | | 1.000 | 1.000 | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Control delay | | | | 29.3 | 28.5 | | 27.9 | 28.0 | 37.2 | 11.1 | |
| Lane group LOS | | | | C | C | | C | C | D | B | |
| Apprch. delay | | | | 29.1 | | | 27.9 | | 12.9 | | |
| Approach LOS | | | | C | | | C | | B | | |
| Intersec. delay | 20.2 | | | Intersection LOS | | | | | C | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (BO 2050 PM) - [4 lanes improvement, pocket]*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | | LT | R | L | TR | |
| Adj. flow rate | | | | 71 | 28 | | | 976 | 154 | 66 | 1124 | |
| Satflow rate | | | | 1770 | 1583 | | | 3539 | 1583 | 1770 | 3539 | |
| Lost time | | | | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Green ratio | | | | 0.30 | 0.30 | | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Lane group cap. | | | | 539 | 482 | | | 1231 | 551 | 385 | 2123 | |
| v/c ratio | | | | 0.13 | 0.06 | | | 0.79 | 0.28 | 0.17 | 0.53 | |
| Flow ratio | | | | 0.04 | 0.02 | | | 0.28 | 0.10 | 0.04 | 0.32 | |
| Crit. lane group | | | | Y | N | | | N | N | N | Y | |
| Sum flow ratios | 0.36 | | | | | | | | | | | |
| Lost time/cycle | 11.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.40 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | | LT | R | L | TR | |
| Adj. flow rate | | | | 71 | 28 | | | 976 | 154 | 66 | 1124 | |
| Lane group cap. | | | | 539 | 482 | | | 1231 | 551 | 385 | 2123 | |
| v/c ratio | | | | 0.13 | 0.06 | | | 0.79 | 0.28 | 0.17 | 0.53 | |
| Green ratio | | | | 0.30 | 0.30 | | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Unif. delay d1 | | | | 29.0 | 28.3 | | | 33.8 | 27.1 | 36.6 | 13.5 | |
| Delay factor k | | | | 0.50 | 0.50 | | | 0.50 | 0.50 | 0.50 | 0.50 | |
| Increm. delay d2 | | | | 0.5 | 0.2 | | | 5.3 | 1.3 | 1.0 | 0.9 | |
| PF factor | | | | 1.000 | 1.000 | | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Control delay | | | | 29.5 | 28.6 | | | 39.1 | 28.4 | 37.5 | 14.4 | |
| Lane group LOS | | | | C | C | | | D | C | D | B | |
| Apprch. delay | | | | 29.2 | | | 37.6 | | | 15.7 | | |
| Approach LOS | | | | C | | | D | | | B | | |
| Intersec. delay | 26.5 | | | Intersection LOS | | | | | | C | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (IY 2030 PM) - [4 lanes improvement, pocket]*

## Capacity Analysis

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | LT | R | L | TR | |
| Adj. flow rate | | | | 67 | 27 | | 767 | 147 | 62 | 960 | |
| Satflow rate | | | | 1770 | 1583 | | 3539 | 1583 | 1770 | 3539 | |
| Lost time | | | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Green ratio | | | | 0.30 | 0.30 | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Lane group cap. | | | | 539 | 482 | | 1231 | 551 | 385 | 2123 | |
| v/c ratio | | | | 0.12 | 0.06 | | 0.62 | 0.27 | 0.16 | 0.45 | |
| Flow ratio | | | | 0.04 | 0.02 | | 0.22 | 0.09 | 0.04 | 0.27 | |
| Crit. lane group | | | | Y | N | | N | N | N | Y | |
| Sum flow ratios | 0.31 | | | | | | | | | | |
| Lost time/cycle | 11.00 | | | | | | | | | | |
| Critical v/c ratio | 0.34 | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | LT | R | L | TR | |
| Adj. flow rate | | | | 67 | 27 | | 767 | 147 | 62 | 960 | |
| Lane group cap. | | | | 539 | 482 | | 1231 | 551 | 385 | 2123 | |
| v/c ratio | | | | 0.12 | 0.06 | | 0.62 | 0.27 | 0.16 | 0.45 | |
| Green ratio | | | | 0.30 | 0.30 | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Unif. delay d1 | | | | 28.9 | 28.3 | | 31.2 | 27.0 | 36.5 | 12.6 | |
| Delay factor k | | | | 0.50 | 0.50 | | 0.50 | 0.50 | 0.50 | 0.50 | |
| Increm. delay d2 | | | | 0.5 | 0.2 | | 2.4 | 1.2 | 0.9 | 0.7 | |
| PF factor | | | | 1.000 | 1.000 | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Control delay | | | | 29.4 | 28.5 | | 33.6 | 28.1 | 37.4 | 13.3 | |
| Lane group LOS | | | | C | C | | C | C | D | B | |
| Apprch. delay | | | | 29.1 | | | 32.7 | | 14.8 | | |
| Approach LOS | | | | C | | | C | | B | | |
| Intersec. delay | 23.5 | | | Intersection LOS | | | | | C | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Kalmia (IY 2011 PM) - [4 lanes improvement, pocket]*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | | LT | R | L | TR | |
| Adj. flow rate | | | | 65 | 26 | | | 556 | 141 | 58 | 795 | |
| Satflow rate | | | | 1770 | 1583 | | | 3539 | 1583 | 1770 | 3539 | |
| Lost time | | | | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Green ratio | | | | 0.30 | 0.30 | | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Lane group cap. | | | | 539 | 482 | | | 1231 | 551 | 385 | 2123 | |
| v/c ratio | | | | 0.12 | 0.05 | | | 0.45 | 0.26 | 0.15 | 0.37 | |
| Flow ratio | | | | 0.04 | 0.02 | | | 0.16 | 0.09 | 0.03 | 0.22 | |
| Crit. lane group | | | | Y | N | | | N | N | N | Y | |
| Sum flow ratios | 0.26 | | | | | | | | | | | |
| Lost time/cycle | 11.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.29 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | | | | L | TR | | | LT | R | L | TR | |
| Adj. flow rate | | | | 65 | 26 | | | 556 | 141 | 58 | 795 | |
| Lane group cap. | | | | 539 | 482 | | | 1231 | 551 | 385 | 2123 | |
| v/c ratio | | | | 0.12 | 0.05 | | | 0.45 | 0.26 | 0.15 | 0.37 | |
| Green ratio | | | | 0.30 | 0.30 | | | 0.35 | 0.35 | 0.22 | 0.60 | |
| Unif. delay d1 | | | | 28.9 | 28.3 | | | 29.0 | 26.8 | 36.4 | 11.9 | |
| Delay factor k | | | | 0.50 | 0.50 | | | 0.50 | 0.50 | 0.50 | 0.50 | |
| Increm. delay d2 | | | | 0.5 | 0.2 | | | 1.2 | 1.1 | 0.8 | 0.5 | |
| PF factor | | | | 1.000 | 1.000 | | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Control delay | | | | 29.3 | 28.5 | | | 30.2 | 28.0 | 37.2 | 12.4 | |
| Lane group LOS | | | | C | C | | | C | C | D | B | |
| Apprch. delay | | | | 29.1 | | | 29.8 | | | 14.1 | | |
| Approach LOS | | | | C | | | C | | | B | | |
| Intersec. delay | 21.6 | | | Intersection LOS | | | | | | C | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Ironwood (BO 2050 PM) - [6 lanes total]*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | T | R | L | T | R | L | TR | | L | TR | |
| Adj. flow rate | 105 | 385 | 363 | 162 | 256 | 151 | 347 | 1093 | | 157 | 1123 | |
| Satflow rate | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 4946 | | 1770 | 5028 | |
| Lost time | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | | 0.17 | 0.25 | |
| Lane group cap. | 296 | 468 | 397 | 296 | 468 | 397 | 296 | 1242 | | 296 | 1262 | |
| v/c ratio | 0.35 | 0.82 | 0.91 | 0.55 | 0.55 | 0.38 | 1.17 | 0.88 | | 0.53 | 0.89 | |
| Flow ratio | 0.06 | 0.21 | 0.23 | 0.09 | 0.14 | 0.10 | 0.20 | 0.22 | | 0.09 | 0.22 | |
| Crit. lane group | N | N | Y | Y | N | N | Y | N | | N | Y | |
| Sum flow ratios | 0.74 | | | | | | | | | | | |
| Lost time/cycle | 19.50 | | | | | | | | | | | |
| Critical v/c ratio | 0.88 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | T | R | L | T | R | L | TR | | L | TR | |
| Adj. flow rate | 105 | 385 | 363 | 162 | 256 | 151 | 347 | 1093 | | 157 | 1123 | |
| Lane group cap. | 296 | 468 | 397 | 296 | 468 | 397 | 296 | 1242 | | 296 | 1262 | |
| v/c ratio | 0.35 | 0.82 | 0.91 | 0.55 | 0.55 | 0.38 | 1.17 | 0.88 | | 0.53 | 0.89 | |
| Green ratio | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | | 0.17 | 0.25 | |
| Unif. delay d1 | 44.0 | 42.2 | 43.5 | 45.6 | 38.9 | 37.1 | 49.8 | 43.0 | | 45.5 | 43.2 | |
| Delay factor k | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 3.3 | 15.0 | 28.0 | 7.1 | 4.5 | 2.8 | 107.4 | 9.1 | | 6.7 | 9.6 | |
| PF factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 47.3 | 57.3 | 71.5 | 52.7 | 43.4 | 39.8 | 157.2 | 52.1 | | 52.1 | 52.8 | |
| Lane group LOS | D | E | E | D | D | D | F | D | | D | D | |
| Apprch. delay | 62.1 | | | 45.1 | | | 77.4 | | | 52.7 | | |
| Approach LOS | E | | | D | | | E | | | D | | |
| Intersec. delay | 62.2 | | | Intersection LOS | | | | | | E | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Ironwood (IY 2030 PM) - [6 lanes total]*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | T | R | L | T | R | L | TR | | L | TR | |
| Adj. flow rate | 91 | 311 | 312 | 156 | 223 | 133 | 313 | 911 | | 151 | 965 | |
| Satflow rate | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 4925 | | 1770 | 5022 | |
| Lost time | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | | 0.17 | 0.25 | |
| Lane group cap. | 296 | 468 | 397 | 296 | 468 | 397 | 296 | 1236 | | 296 | 1261 | |
| v/c ratio | 0.31 | 0.66 | 0.79 | 0.53 | 0.48 | 0.34 | 1.06 | 0.74 | | 0.51 | 0.77 | |
| Flow ratio | 0.05 | 0.17 | 0.20 | 0.09 | 0.12 | 0.08 | 0.18 | 0.18 | | 0.09 | 0.19 | |
| Crit. lane group | N | N | Y | Y | N | N | Y | N | | N | Y | |
| Sum flow ratios | 0.65 | | | | | | | | | | | |
| Lost time/cycle | 19.50 | | | | | | | | | | | |
| Critical v/c ratio | 0.78 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | T | R | L | T | R | L | TR | | L | TR | |
| Adj. flow rate | 91 | 311 | 312 | 156 | 223 | 133 | 313 | 911 | | 151 | 965 | |
| Lane group cap. | 296 | 468 | 397 | 296 | 468 | 397 | 296 | 1236 | | 296 | 1261 | |
| v/c ratio | 0.31 | 0.66 | 0.79 | 0.53 | 0.48 | 0.34 | 1.06 | 0.74 | | 0.51 | 0.77 | |
| Green ratio | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | | 0.17 | 0.25 | |
| Unif. delay d1 | 43.7 | 40.2 | 41.8 | 45.4 | 38.1 | 36.6 | 49.8 | 41.1 | | 45.3 | 41.5 | |
| Delay factor k | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 2.7 | 7.3 | 14.5 | 6.6 | 3.5 | 2.3 | 68.2 | 4.0 | | 6.2 | 4.5 | |
| PF factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 46.3 | 47.5 | 56.2 | 52.0 | 41.5 | 38.9 | 118.0 | 45.1 | | 51.5 | 46.0 | |
| Lane group LOS | D | D | E | D | D | D | F | D | | D | D | |
| Apprch. delay | 51.2 | | | 44.0 | | | 63.7 | | | 46.7 | | |
| Approach LOS | D | | | D | | | E | | | D | | |
| Intersec. delay | 53.1 | | | Intersection LOS | | | | | | D | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Ironwood (IY 2011 PM) - [6 lanes total]*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | T | R | L | T | R | L | TR | | L | TR | |
| Adj. flow rate | 76 | 235 | 259 | 148 | 191 | 115 | 277 | 728 | | 144 | 806 | |
| Satflow rate | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 4894 | | 1770 | 5012 | |
| Lost time | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | | 0.17 | 0.25 | |
| Lane group cap. | 296 | 468 | 397 | 296 | 468 | 397 | 296 | 1229 | | 296 | 1258 | |
| v/c ratio | 0.26 | 0.50 | 0.65 | 0.50 | 0.41 | 0.29 | 0.94 | 0.59 | | 0.49 | 0.64 | |
| Flow ratio | 0.04 | 0.13 | 0.16 | 0.08 | 0.10 | 0.07 | 0.16 | 0.15 | | 0.08 | 0.16 | |
| Crit. lane group | N | N | Y | Y | N | N | Y | N | | N | Y | |
| Sum flow ratios | 0.56 | | | | | | | | | | | |
| Lost time/cycle | 19.50 | | | | | | | | | | | |
| Critical v/c ratio | 0.67 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | T | R | L | T | R | L | TR | | L | TR | |
| Adj. flow rate | 76 | 235 | 259 | 148 | 191 | 115 | 277 | 728 | | 144 | 806 | |
| Lane group cap. | 296 | 468 | 397 | 296 | 468 | 397 | 296 | 1229 | | 296 | 1258 | |
| v/c ratio | 0.26 | 0.50 | 0.65 | 0.50 | 0.41 | 0.29 | 0.94 | 0.59 | | 0.49 | 0.64 | |
| Green ratio | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | 0.25 | 0.17 | 0.25 | | 0.17 | 0.25 | |
| Unif. delay d1 | 43.3 | 38.4 | 40.1 | 45.2 | 37.3 | 36.1 | 49.1 | 39.4 | | 45.1 | 39.9 | |
| Delay factor k | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 2.1 | 3.8 | 8.1 | 5.9 | 2.6 | 1.8 | 38.2 | 2.1 | | 5.6 | 2.5 | |
| PF factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 45.4 | 42.2 | 48.2 | 51.1 | 40.0 | 38.0 | 87.3 | 41.5 | | 50.7 | 42.5 | |
| Lane group LOS | D | D | D | D | D | D | F | D | | D | D | |
| Apprch. delay | 45.3 | | | 43.1 | | | 54.1 | | | 43.7 | | |
| Approach LOS | D | | | D | | | D | | | D | | |
| Intersec. delay | 47.4 | | | Intersection LOS | | | | | | D | | |

# Perris Boulevard/Pico Vista Way
# Intersection LOS Analysis

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd & Pico Vista Wy (BO 2050 PM) (6 lanes total)*

## Capacity Analysis

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 1107 | 65 | 1101 |
| Satflow rate | | 1729 | 5081 | 1805 | 5187 |
| Lost time | | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | | 526 | 1767 | 392 | 3112 |
| v/c ratio | | 0.01 | 0.63 | 0.17 | 0.35 |
| Flow ratio | | 0.00 | 0.22 | 0.04 | 0.21 |
| Crit. lane group | | Y | Y | Y | N |
| Sum flow ratios | 0.26 | | | | |
| Lost time/cycle | 15.00 | | | | |
| Critical v/c ratio | 0.30 | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 1107 | 65 | 1101 |
| Lane group cap. | | 526 | 1767 | 392 | 3112 |
| v/c ratio | | 0.01 | 0.63 | 0.17 | 0.35 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | | 27.9 | 31.3 | 36.5 | 11.7 |
| Delay factor k | | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | | 0.0 | 1.7 | 0.9 | 0.3 |
| PF factor | | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | | 28.0 | 33.0 | 37.4 | 12.0 |
| Lane group LOS | | C | C | D | B |
| Apprch. delay | | 28.0 | 33.0 | 13.4 | |
| Approach LOS | | C | C | B | |
| Intersec. delay | 22.9 | Intersection LOS | | C | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd & Pico Vista Wy (IY 2030 PM) (6 lanes total)*

## Capacity Analysis

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 739 | 4 | 987 |
| Satflow rate | | 1729 | 5175 | 1805 | 5187 |
| Lost time | | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | | 526 | 1800 | 392 | 3112 |
| v/c ratio | | 0.01 | 0.41 | 0.01 | 0.32 |
| Flow ratio | | 0.00 | 0.14 | 0.00 | 0.19 |
| Crit. lane group | | Y | N | N | Y |
| Sum flow ratios | 0.19 | | | | |
| Lost time/cycle | 11.00 | | | | |
| Critical v/c ratio | 0.21 | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 739 | 4 | 987 |
| Lane group cap. | | 526 | 1800 | 392 | 3112 |
| v/c ratio | | 0.01 | 0.41 | 0.01 | 0.32 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | | 27.9 | 28.5 | 35.3 | 11.4 |
| Delay factor k | | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | | 0.0 | 0.7 | 0.0 | 0.3 |
| PF factor | | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | | 28.0 | 29.2 | 35.3 | 11.6 |
| Lane group LOS | | C | C | D | B |
| Apprch. delay | | 28.0 | 29.2 | 11.7 | |
| Approach LOS | | C | C | B | |
| Intersec. delay | 19.2 | Intersection LOS | | B | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd & Pico Vista Wy (IY 2011 PM) (6 lanes total)*

## Capacity Analysis

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 536 | 4 | 820 |
| Satflow rate | | 1729 | 5178 | 1805 | 5187 |
| Lost time | | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | | 526 | 1801 | 392 | 3112 |
| v/c ratio | | 0.01 | 0.30 | 0.01 | 0.26 |
| Flow ratio | | 0.00 | 0.10 | 0.00 | 0.16 |
| Crit. lane group | | Y | N | N | Y |
| Sum flow ratios | 0.16 | | | | |
| Lost time/cycle | 11.00 | | | | |
| Critical v/c ratio | 0.18 | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 536 | 4 | 820 |
| Lane group cap. | | 526 | 1801 | 392 | 3112 |
| v/c ratio | | 0.01 | 0.30 | 0.01 | 0.26 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | | 27.9 | 27.3 | 35.3 | 10.9 |
| Delay factor k | | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | | 0.0 | 0.4 | 0.0 | 0.2 |
| PF factor | | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | | 28.0 | 27.7 | 35.3 | 11.1 |
| Lane group LOS | | C | C | D | B |
| Apprch. delay | | 28.0 | 27.7 | 11.3 | |
| Approach LOS | | C | C | B | |
| Intersec. delay | 17.8 | Intersection LOS | | B | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd & Pico Vista Wy (IY 2050 PM) (4 lanes total)*

## Capacity Analysis

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | *LTR* | *TR* | *L* | *T* |
| Adj. flow rate | | *6* | *1107* | *65* | *1101* |
| Satflow rate | | *1729* | *3536* | *1805* | *3610* |
| Lost time | | *2.0* | *2.0* | *2.0* | *2.0* |
| Green ratio | | *0.30* | *0.35* | *0.22* | *0.60* |
| Lane group cap. | | *526* | *1230* | *392* | *2166* |
| v/c ratio | | *0.01* | *0.90* | *0.17* | *0.51* |
| Flow ratio | | *0.00* | *0.31* | *0.04* | *0.30* |
| Crit. lane group | | *Y* | *Y* | *Y* | *N* |
| Sum flow ratios | *0.35* | | | | |
| Lost time/cycle | *15.00* | | | | |
| Critical v/c ratio | *0.41* | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | *LTR* | *TR* | *L* | *T* |
| Adj. flow rate | | *6* | *1107* | *65* | *1101* |
| Lane group cap. | | *526* | *1230* | *392* | *2166* |
| v/c ratio | | *0.01* | *0.90* | *0.17* | *0.51* |
| Green ratio | | *0.30* | *0.35* | *0.22* | *0.60* |
| Unif. delay d1 | | *27.9* | *35.6* | *36.5* | *13.2* |
| Delay factor k | | *0.50* | *0.50* | *0.50* | *0.50* |
| Increm. delay d2 | | *0.0* | *10.7* | *0.9* | *0.9* |
| PF factor | | *1.000* | *1.000* | *1.000* | *1.000* |
| Control delay | | *28.0* | *46.3* | *37.4* | *14.1* |
| Lane group LOS | | *C* | *D* | *D* | *B* |
| Apprch. delay | | *28.0* | *46.3* | *15.4* | |
| Approach LOS | | *C* | *D* | *B* | |
| Intersec. delay | *30.4* | Intersection LOS | | *C* | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd & Pico Vista Wy (IY 2030 PM) (4 lanes total)*

## Capacity Analysis

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 739 | 4 | 987 |
| Satflow rate | | 1729 | 3602 | 1805 | 3610 |
| Lost time | | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | | 526 | 1253 | 392 | 2166 |
| v/c ratio | | 0.01 | 0.59 | 0.01 | 0.46 |
| Flow ratio | | 0.00 | 0.21 | 0.00 | 0.27 |
| Crit. lane group | | Y | N | N | Y |
| Sum flow ratios | 0.28 | | | | |
| Lost time/cycle | 11.00 | | | | |
| Critical v/c ratio | 0.31 | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 739 | 4 | 987 |
| Lane group cap. | | 526 | 1253 | 392 | 2166 |
| v/c ratio | | 0.01 | 0.59 | 0.01 | 0.46 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | | 27.9 | 30.8 | 35.3 | 12.7 |
| Delay factor k | | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | | 0.0 | 2.0 | 0.0 | 0.7 |
| PF factor | | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | | 28.0 | 32.8 | 35.3 | 13.4 |
| Lane group LOS | | C | C | D | B |
| Apprch. delay | | 28.0 | 32.8 | 13.4 | |
| Approach LOS | | C | C | B | |
| Intersec. delay | 21.7 | Intersection LOS | | C | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd & Pico Vista Wy (IY 2011 PM) (4 lanes total)*

## Capacity Analysis

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 536 | 4 | 820 |
| Satflow rate | | 1729 | 3604 | 1805 | 3610 |
| Lost time | | 2.0 | 2.0 | 2.0 | 2.0 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Lane group cap. | | 526 | 1254 | 392 | 2166 |
| v/c ratio | | 0.01 | 0.43 | 0.01 | 0.38 |
| Flow ratio | | 0.00 | 0.15 | 0.00 | 0.23 |
| Crit. lane group | | Y | N | N | Y |
| Sum flow ratios | 0.23 | | | | |
| Lost time/cycle | 11.00 | | | | |
| Critical v/c ratio | 0.26 | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | WB | NB | SB | |
|---|---|---|---|---|---|
| Lane group | | LTR | TR | L | T |
| Adj. flow rate | | 6 | 536 | 4 | 820 |
| Lane group cap. | | 526 | 1254 | 392 | 2166 |
| v/c ratio | | 0.01 | 0.43 | 0.01 | 0.38 |
| Green ratio | | 0.30 | 0.35 | 0.22 | 0.60 |
| Unif. delay d1 | | 27.9 | 28.7 | 35.3 | 11.9 |
| Delay factor k | | 0.50 | 0.50 | 0.50 | 0.50 |
| Increm. delay d2 | | 0.0 | 1.1 | 0.0 | 0.5 |
| PF factor | | 1.000 | 1.000 | 1.000 | 1.000 |
| Control delay | | 28.0 | 29.8 | 35.3 | 12.4 |
| Lane group LOS | | C | C | D | B |
| Apprch. delay | | 28.0 | 29.8 | 12.5 | |
| Approach LOS | | C | C | B | |
| Intersec. delay | 19.4 | Intersection LOS | | B | |

# TWO-WAY STOP CONTROL SUMMARY

## General Information

| | |
|---|---|
| Analyst | *Philip Nitollama* |
| Agency/Co. | *Boyle Engineering* |
| Date Performed | *6/20/2007* |
| Analysis Time Period | *Year 2030- No Build* |

## Site Information

| | |
|---|---|
| Intersection | *Perris (NS) & Pico Vista (EW)* |
| Jurisdiction | *Moreno Valley* |
| Analysis Year | *Interim Year 2030 PM* |
| Project ID | *Perris Boulevard Widening (JN# 23079.00)* |

East/West Street: *Pico Vista Way* | North/South Street: *Perris Boulevard*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

## Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume | *0* | *706* | *11* | *4* | *957* | *0* |
| Peak-Hour Factor, PHF | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* |
| Hourly Flow Rate, HFR | *0* | *727* | *11* | *4* | *986* | *0* |
| Percent Heavy Vehicles | *0* | -- | -- | *0* | -- | -- |
| Median Type | *Undivided* | | | | | |
| RT Channelized | | | *0* | | | *0* |
| Lanes | *0* | *1* | *0* | *1* | *1* | *0* |
| Configuration | | | *TR* | *L* | *T* | |
| Upstream Signal | | *1* | | | *1* | |

| Minor Street | Westbound | | | Eastbound | | |
|---|---|---|---|---|---|---|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume | *3* | *0* | *3* | *0* | *0* | *0* |
| Peak-Hour Factor, PHF | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* |
| Hourly Flow Rate, HFR | *3* | *0* | *3* | *0* | *0* | *0* |
| Percent Heavy Vehicles | *0* | *0* | *0* | *0* | *0* | *0* |
| Percent Grade (%) | | *0* | | | *0* | |
| Flared Approach | | *Y* | | | *N* | |
| Storage | | *1* | | | *0* | |
| RT Channelized | | | *0* | | | *0* |
| Lanes | *0* | *1* | *0* | *0* | *0* | *0* |
| Configuration | | *LTR* | | | | |

## Delay, Queue Length, and Level of Service

| Approach | NB | SB | Westbound | | | Eastbound | | |
|---|---|---|---|---|---|---|---|---|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | | *L* | | *LTR* | | | | |
| v (vph) | | *4* | | *6* | | | | |
| C (m) (vph) | | *891* | | | | | | |
| v/c | | *0.00* | | | | | | |
| 95% queue length | | *0.01* | | | | | | |
| Control Delay | | *9.1* | | | | | | |
| LOS | | *A* | | | | | | |
| Approach Delay | -- | -- | | | | | | |
| Approach LOS | -- | -- | | | | | | |

# TWO-WAY STOP CONTROL SUMMARY

## General Information

| | |
|---|---|
| Analyst | *Philip Nitollama* |
| Agency/Co. | *Boyle Engineering* |
| Date Performed | *6/20/2007* |
| Analysis Time Period | *Buildout 2050 PM - No Build* |

## Site Information

| | |
|---|---|
| Intersection | *Perris (NS) & Pico Vista (EW)* |
| Jurisdiction | *Moreno Valley* |
| Analysis Year | *Buildout 2050 PM* |
| Project ID | *Perris Boulevard Widening (JN# 23079.00)* |

East/West Street: *Pico Vista Way* North/South Street: *Perris Boulevard*

Intersection Orientation: *North-South* Study Period (hrs): *0.25*

## Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume | *0* | *927* | *146* | *63* | *1068* | *0* |
| Peak-Hour Factor, PHF | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* |
| Hourly Flow Rate, HFR | *0* | *955* | *150* | *64* | *1101* | *0* |
| Percent Heavy Vehicles | *0* | -- | -- | *0* | -- | -- |
| Median Type | *Undivided* | | | | | |
| RT Channelized | | | *0* | | | *0* |
| Lanes | *0* | *1* | *0* | *1* | *1* | *0* |
| Configuration | | | *TR* | *L* | *T* | |
| Upstream Signal | | *1* | | | *1* | |

| Minor Street | Westbound | | | Eastbound | | |
|---|---|---|---|---|---|---|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume | *3* | *0* | *3* | *0* | *0* | *0* |
| Peak-Hour Factor, PHF | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* |
| Hourly Flow Rate, HFR | *3* | *0* | *3* | *0* | *0* | *0* |
| Percent Heavy Vehicles | *0* | *0* | *0* | *0* | *0* | *0* |
| Percent Grade (%) | | *0* | | | *0* | |
| Flared Approach | | *Y* | | | *N* | |
| Storage | | *1* | | | *0* | |
| RT Channelized | | | *0* | | | *0* |
| Lanes | *0* | *1* | *0* | *0* | *0* | *0* |
| Configuration | | *LTR* | | | | |

## Delay, Queue Length, and Level of Service

| Approach | NB | SB | Westbound | | | Eastbound | | |
|---|---|---|---|---|---|---|---|---|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | | *L* | | *LTR* | | | | |
| v (vph) | | *64* | | *6* | | | | |
| C(m) (vph) | | *534* | | | | | | |
| v/c | | *0.12* | | | | | | |
| 95% queue length | | *0.41* | | | | | | |
| Control Delay | | *12.7* | | | | | | |
| LOS | | *B* | | | | | | |
| Approach Delay | -- | -- | | | | | | |
| Approach LOS | -- | -- | | | | | | |

# TWO-WAY STOP CONTROL SUMMARY

## General Information

| | |
|---|---|
| Analyst | *Philip Nitollama* |
| Agency/Co. | *Boyle Engineering* |
| Date Performed | *6/20/2007* |
| Analysis Time Period | *Year 2011 - No Build* |

## Site Information

| | |
|---|---|
| Intersection | *Perris (NS) & Pico Vista (EW)* |
| Jurisdiction | *Moreno Valley* |
| Analysis Year | *Interim Year 2011 PM* |
| Project ID | *Perris Boulevard Widening (JN# 23079.00)* |

East/West Street: *Pico Vista Way* North/South Street: *Perris Boulevard*

Intersection Orientation: *North-South* Study Period (hrs): *0.25*

## Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume | *0* | *514* | *6* | *4* | *795* | *0* |
| Peak-Hour Factor, PHF | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* |
| Hourly Flow Rate, HFR | *0* | *529* | *6* | *4* | *819* | *0* |
| Percent Heavy Vehicles | *0* | -- | -- | *0* | -- | -- |
| Median Type | *Undivided* | | | | | |
| RT Channelized | | | *0* | | | *0* |
| Lanes | *0* | *1* | *0* | *1* | *1* | *0* |
| Configuration | | | *TR* | *L* | *T* | |
| Upstream Signal | | *1* | | | *1* | |

| Minor Street | Westbound | | | Eastbound | | |
|---|---|---|---|---|---|---|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume | *3* | *0* | *3* | *0* | *0* | *0* |
| Peak-Hour Factor, PHF | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* |
| Hourly Flow Rate, HFR | *3* | *0* | *3* | *0* | *0* | *0* |
| Percent Heavy Vehicles | *0* | *0* | *0* | *0* | *0* | *0* |
| Percent Grade (%) | | *0* | | | *0* | |
| Flared Approach | | *Y* | | | *N* | |
| Storage | | *1* | | | *0* | |
| RT Channelized | | | *0* | | | *0* |
| Lanes | *0* | *1* | *0* | *0* | *0* | *0* |
| Configuration | | *LTR* | | | | |

## Delay, Queue Length, and Level of Service

| Approach | NB | SB | Westbound | | | Eastbound | | |
|---|---|---|---|---|---|---|---|---|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | | *L* | | *LTR* | | | | |
| v (vph) | | *4* | | *6* | | | | |
| C (m) (vph) | | *1052* | | *1180* | | | | |
| v/c | | *0.00* | | *0.01* | | | | |
| 95% queue length | | *0.01* | | *0.02* | | | | |
| Control Delay | | *8.4* | | *8.1* | | | | |
| LOS | | *A* | | *A* | | | | |
| Approach Delay | -- | -- | | *8.1* | | | | |
| Approach LOS | -- | -- | | *A* | | | | |

# TWO-WAY STOP CONTROL SUMMARY

## General Information

| | |
|---|---|
| Analyst | *Philip Nitollama* |
| Agency/Co. | *Boyle Engineering* |
| Date Performed | *6/20/2007* |
| Analysis Time Period | *Existing* |

## Site Information

| | |
|---|---|
| Intersection | *Perris (NS) & Pico Vista (EW)* |
| Jurisdiction | *Moreno Valley* |
| Analysis Year | *Existing PM* |
| Project ID | *Perris Boulevard Widening (JN# 23079.00)* |

East/West Street: *Pico Vista Way* | North/South Street: *Perris Boulevard*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

## Vehicle Volumes and Adjustments

| **Major Street** | Northbound | | | Southbound | | |
|---|---|---|---|---|---|---|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume | *0* | *473* | *5* | *4* | *761* | *0* |
| Peak-Hour Factor, PHF | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* |
| Hourly Flow Rate, HFR | *0* | *487* | *5* | *4* | *784* | *0* |
| Percent Heavy Vehicles | *0* | – | – | *0* | – | – |
| Median Type | *Undivided* | | | | | |
| RT Channelized | | | *0* | | | *0* |
| Lanes | *0* | *1* | *0* | *1* | *1* | *0* |
| Configuration | | | *TR* | *L* | *T* | |
| Upstream Signal | | *1* | | | *1* | |

| **Minor Street** | Westbound | | | Eastbound | | |
|---|---|---|---|---|---|---|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume | *3* | *0* | *3* | *0* | *0* | *0* |
| Peak-Hour Factor, PHF | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* | *0.97* |
| Hourly Flow Rate, HFR | *3* | *0* | *3* | *0* | *0* | *0* |
| Percent Heavy Vehicles | *0* | *0* | *0* | *0* | *0* | *0* |
| Percent Grade (%) | | *0* | | | *0* | |
| Flared Approach | | *Y* | | | *N* | |
| Storage | | *1* | | | *0* | |
| RT Channelized | | | *0* | | | *0* |
| Lanes | *0* | *1* | *0* | *0* | *0* | *0* |
| Configuration | | *LTR* | | | | |

## Delay, Queue Length, and Level of Service

| Approach | NB | SB | Westbound | | | Eastbound | | |
|---|---|---|---|---|---|---|---|---|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | | *L* | | *LTR* | | | | |
| v (vph) | | *4* | | *6* | | | | |
| C (m) (vph) | | *1089* | | *1262* | | | | |
| v/c | | *0.00* | | *0.00* | | | | |
| 95% queue length | | *0.01* | | *0.01* | | | | |
| Control Delay | | *8.3* | | *7.9* | | | | |
| LOS | | *A* | | *A* | | | | |
| Approach Delay | – | – | *7.9* | | | | | |
| Approach LOS | – | – | *A* | | | | | |

# Perris Boulevard/Manzanita Avenue Intersection LOS Analysis

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Manzanita (BO2050 PM) - [6 lanes total]*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 390 | 108 | | 24 | 14 | | 62 | 961 | | 7 | 1385 | |
| Satflow rate | 1770 | 1664 | | 1770 | 1843 | | 1770 | 5066 | | 1770 | 4970 | |
| Lost time | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 1309 | | 325 | 1284 | |
| v/c ratio | 1.20 | 0.30 | | 0.07 | 0.04 | | 0.19 | 0.73 | | 0.02 | 1.08 | |
| Flow ratio | 0.22 | 0.06 | | 0.01 | 0.01 | | 0.04 | 0.19 | | 0.00 | 0.28 | |
| Crit. lane group | Y | Y | | N | N | | Y | N | | N | Y | |
| Sum flow ratios | 0.60 | | | | | | | | | | | |
| Lost time/cycle | 19.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.71 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 390 | 108 | | 24 | 14 | | 62 | 961 | | 7 | 1385 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 1309 | | 325 | 1284 | |
| v/c ratio | 1.20 | 0.30 | | 0.07 | 0.04 | | 0.19 | 0.73 | | 0.02 | 1.08 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Unif. delay d1 | 49.0 | 39.4 | | 40.6 | 37.1 | | 41.5 | 40.7 | | 40.2 | 44.5 | |
| Delay factor k | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 115.8 | 2.1 | | 0.4 | 0.2 | | 1.3 | 3.7 | | 0.1 | 49.2 | |
| PF factor | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 164.8 | 41.5 | | 41.0 | 37.3 | | 42.8 | 44.4 | | 40.3 | 93.7 | |
| Lane group LOS | F | D | | D | D | | D | D | | D | F | |
| Apprch. delay | 138.1 | | | 39.6 | | | 44.3 | | | 93.5 | | |
| Approach LOS | F | | | D | | | D | | | F | | |
| Intersec. delay | 83.3 | | | Intersection LOS | | | | | | F | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Manzanita (IY2030 PM) - [6 lanes total]*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 225 | 104 | | 23 | 14 | | 59 | 738 | | 7 | 1114 | |
| Satflow rate | 1770 | 1664 | | 1770 | 1843 | | 1770 | 5062 | | 1770 | 4996 | |
| Lost time | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 1308 | | 325 | 1291 | |
| v/c ratio | 0.69 | 0.29 | | 0.07 | 0.04 | | 0.18 | 0.56 | | 0.02 | 0.86 | |
| Flow ratio | 0.13 | 0.06 | | 0.01 | 0.01 | | 0.03 | 0.15 | | 0.00 | 0.22 | |
| Crit. lane group | Y | Y | | N | N | | Y | N | | N | Y | |
| Sum flow ratios | 0.45 | | | | | | | | | | | |
| Lost time/cycle | 19.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.53 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 225 | 104 | | 23 | 14 | | 59 | 738 | | 7 | 1114 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 1308 | | 325 | 1291 | |
| v/c ratio | 0.69 | 0.29 | | 0.07 | 0.04 | | 0.18 | 0.56 | | 0.02 | 0.86 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Unif. delay d1 | 45.8 | 39.3 | | 40.5 | 37.1 | | 41.4 | 38.6 | | 40.2 | 42.5 | |
| Delay factor k | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 11.5 | 2.0 | | 0.4 | 0.2 | | 1.2 | 1.8 | | 0.1 | 7.8 | |
| PF factor | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 57.3 | 41.3 | | 41.0 | 37.3 | | 42.6 | 40.4 | | 40.3 | 50.3 | |
| Lane group LOS | E | D | | D | D | | D | D | | D | D | |
| Apprch. delay | 52.3 | | | 39.6 | | | 40.6 | | | 50.2 | | |
| Approach LOS | D | | | D | | | D | | | D | | |
| Intersec. delay | 47.0 | | | Intersection LOS | | | | | | D | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris & Manzanita (IY2011 PM) - [6 lanes total]*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 58 | 100 | | 22 | 13 | | 57 | 514 | | 7 | 840 | |
| Satflow rate | 1770 | 1664 | | 1770 | 1841 | | 1770 | 5053 | | 1770 | 5039 | |
| Lost time | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 1305 | | 325 | 1302 | |
| v/c ratio | 0.18 | 0.28 | | 0.07 | 0.03 | | 0.18 | 0.39 | | 0.02 | 0.65 | |
| Flow ratio | 0.03 | 0.06 | | 0.01 | 0.01 | | 0.03 | 0.10 | | 0.00 | 0.17 | |
| Crit. lane group | Y | Y | | N | N | | Y | N | | N | Y | |
| Sum flow ratios | 0.29 | | | | | | | | | | | |
| Lost time/cycle | 19.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.35 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 58 | 100 | | 22 | 13 | | 57 | 514 | | 7 | 840 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 1305 | | 325 | 1302 | |
| v/c ratio | 0.18 | 0.28 | | 0.07 | 0.03 | | 0.18 | 0.39 | | 0.02 | 0.65 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Unif. delay d1 | 41.4 | 39.2 | | 40.5 | 37.1 | | 41.3 | 36.7 | | 40.2 | 39.6 | |
| Delay factor k | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 1.2 | 1.9 | | 0.4 | 0.2 | | 1.2 | 0.9 | | 0.1 | 2.5 | |
| PF factor | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 42.6 | 41.1 | | 40.9 | 37.2 | | 42.5 | 37.6 | | 40.3 | 42.1 | |
| Lane group LOS | D | D | | D | D | | D | D | | D | D | |
| Apprch. delay | 41.6 | | | 39.6 | | | 38.1 | | | 42.1 | | |
| Approach LOS | D | | | D | | | D | | | D | | |
| Intersec. delay | 40.6 | | | Intersection LOS | | | | | | D | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd Street Widening - Perris & Manzanita (BO2050 PM)*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 390 | 108 | | 24 | 14 | | 62 | 961 | | 7 | 1385 | |
| Satflow rate | 1770 | 1664 | | 1770 | 1843 | | 1770 | 3526 | | 1770 | 3459 | |
| Lost time | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 911 | | 325 | 894 | |
| v/c ratio | 1.20 | 0.30 | | 0.07 | 0.04 | | 0.19 | 1.05 | | 0.02 | 1.55 | |
| Flow ratio | 0.22 | 0.06 | | 0.01 | 0.01 | | 0.04 | 0.27 | | 0.00 | 0.40 | |
| Crit. lane group | Y | Y | | N | N | | Y | N | | N | Y | |
| Sum flow ratios | 0.72 | | | | | | | | | | | |
| Lost time/cycle | 19.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.86 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 390 | 108 | | 24 | 14 | | 62 | 961 | | 7 | 1385 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 911 | | 325 | 894 | |
| v/c ratio | 1.20 | 0.30 | | 0.07 | 0.04 | | 0.19 | 1.05 | | 0.02 | 1.55 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Unif. delay d1 | 49.0 | 39.4 | | 40.6 | 37.1 | | 41.5 | 44.5 | | 40.2 | 44.5 | |
| Delay factor k | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 115.8 | 2.1 | | 0.4 | 0.2 | | 1.3 | 45.4 | | 0.1 | 252.7 | |
| PF factor | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 164.8 | 41.5 | | 41.0 | 37.3 | | 42.8 | 89.9 | | 40.3 | 297.2 | |
| Lane group LOS | F | D | | D | D | | D | F | | D | F | |
| Apprch. delay | 138.1 | | | 39.6 | | | 87.0 | | | 295.9 | | |
| Approach LOS | F | | | D | | | F | | | F | | |
| Intersec. delay | 193.6 | | | Intersection LOS | | | | | | F | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd Street Widening - Perris & Manzanita (IY2030 PM)*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 225 | 104 | | 23 | 14 | | 59 | 738 | | 7 | 1114 | |
| Satflow rate | 1770 | 1664 | | 1770 | 1843 | | 1770 | 3523 | | 1770 | 3477 | |
| Lost time | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 910 | | 325 | 898 | |
| v/c ratio | 0.69 | 0.29 | | 0.07 | 0.04 | | 0.18 | 0.81 | | 0.02 | 1.24 | |
| Flow ratio | 0.13 | 0.06 | | 0.01 | 0.01 | | 0.03 | 0.21 | | 0.00 | 0.32 | |
| Crit. lane group | Y | Y | | N | N | | Y | N | | N | Y | |
| Sum flow ratios | 0.54 | | | | | | | | | | | |
| Lost time/cycle | 19.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.65 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 225 | 104 | | 23 | 14 | | 59 | 738 | | 7 | 1114 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 910 | | 325 | 898 | |
| v/c ratio | 0.69 | 0.29 | | 0.07 | 0.04 | | 0.18 | 0.81 | | 0.02 | 1.24 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Unif. delay d1 | 45.8 | 39.3 | | 40.5 | 37.1 | | 41.4 | 41.8 | | 40.2 | 44.5 | |
| Delay factor k | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 11.5 | 2.0 | | 0.4 | 0.2 | | 1.2 | 7.8 | | 0.1 | 117.7 | |
| PF factor | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 57.3 | 41.3 | | 41.0 | 37.3 | | 42.6 | 49.5 | | 40.3 | 162.2 | |
| Lane group LOS | E | D | | D | D | | D | D | | D | F | |
| Apprch. delay | 52.3 | | | 39.6 | | | 49.0 | | | 161.5 | | |
| Approach LOS | D | | | D | | | D | | | F | | |
| Intersec. delay | 104.5 | | | Intersection LOS | | | | | | F | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd Street Widening - Perris & Manzanita (IY2011 PM)*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 58 | 100 | | 22 | 13 | | 57 | 514 | | 7 | 840 | |
| Satflow rate | 1770 | 1664 | | 1770 | 1841 | | 1770 | 3516 | | 1770 | 3507 | |
| Lost time | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 908 | | 325 | 906 | |
| v/c ratio | 0.18 | 0.28 | | 0.07 | 0.03 | | 0.18 | 0.57 | | 0.02 | 0.93 | |
| Flow ratio | 0.03 | 0.06 | | 0.01 | 0.01 | | 0.03 | 0.15 | | 0.00 | 0.24 | |
| Crit. lane group | Y | Y | | N | N | | Y | N | | N | Y | |
| Sum flow ratios | 0.36 | | | | | | | | | | | |
| Lost time/cycle | 19.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.43 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 58 | 100 | | 22 | 13 | | 57 | 514 | | 7 | 840 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 908 | | 325 | 906 | |
| v/c ratio | 0.18 | 0.28 | | 0.07 | 0.03 | | 0.18 | 0.57 | | 0.02 | 0.93 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Unif. delay d1 | 41.4 | 39.2 | | 40.5 | 37.1 | | 41.3 | 38.7 | | 40.2 | 43.4 | |
| Delay factor k | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 1.2 | 1.9 | | 0.4 | 0.2 | | 1.2 | 2.6 | | 0.1 | 16.7 | |
| PF factor | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 42.6 | 41.1 | | 40.9 | 37.2 | | 42.5 | 41.2 | | 40.3 | 60.1 | |
| Lane group LOS | D | D | | D | D | | D | D | | D | E | |
| Apprch. delay | 41.6 | | | 39.6 | | | 41.3 | | | 60.0 | | |
| Approach LOS | D | | | D | | | D | | | E | | |
| Intersec. delay | 51.1 | | | Intersection LOS | | | | | | D | | |

# CAPACITY AND LOS WORKSHEET

## General Information

Project Description *Perris Blvd Street Widening - Perris & Manzanita (EX PM)*

## Capacity Analysis

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 23 | 99 | | 22 | 13 | | 56 | 467 | | 7 | 782 | |
| Satflow rate | 1770 | 1665 | | 1770 | 1841 | | 1770 | 3514 | | 1770 | 3516 | |
| Lost time | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 908 | | 325 | 908 | |
| v/c ratio | 0.07 | 0.27 | | 0.07 | 0.03 | | 0.17 | 0.51 | | 0.02 | 0.86 | |
| Flow ratio | 0.01 | 0.06 | | 0.01 | 0.01 | | 0.03 | 0.13 | | 0.00 | 0.22 | |
| Crit. lane group | Y | Y | | N | N | | Y | N | | N | Y | |
| Sum flow ratios | 0.33 | | | | | | | | | | | |
| Lost time/cycle | 19.00 | | | | | | | | | | | |
| Critical v/c ratio | 0.39 | | | | | | | | | | | |

## Lane Group Capacity, Control Delay, and LOS Determination

| | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane group | L | TR | | L | TR | | L | TR | | L | TR | |
| Adj. flow rate | 23 | 99 | | 22 | 13 | | 56 | 467 | | 7 | 782 | |
| Lane group cap. | 325 | 361 | | 325 | 399 | | 325 | 908 | | 325 | 908 | |
| v/c ratio | 0.07 | 0.27 | | 0.07 | 0.03 | | 0.17 | 0.51 | | 0.02 | 0.86 | |
| Green ratio | 0.18 | 0.22 | | 0.18 | 0.22 | | 0.18 | 0.26 | | 0.18 | 0.26 | |
| Unif. delay d1 | 40.5 | 39.1 | | 40.5 | 37.1 | | 41.3 | 38.1 | | 40.2 | 42.4 | |
| Delay factor k | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | | 0.50 | 0.50 | |
| Increm. delay d2 | 0.4 | 1.9 | | 0.4 | 0.2 | | 1.1 | 2.1 | | 0.1 | 10.5 | |
| PF factor | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | | 1.000 | 1.000 | |
| Control delay | 41.0 | 41.0 | | 40.9 | 37.2 | | 42.5 | 40.1 | | 40.3 | 53.0 | |
| Lane group LOS | D | D | | D | D | | D | D | | D | D | |
| Apprch. delay | 41.0 | | | 39.6 | | | 40.4 | | | 52.9 | | |
| Approach LOS | D | | | D | | | D | | | D | | |
| Intersec. delay | 47.1 | | | Intersection LOS | | | | | | D | | |