

# TRIP & PARKING GENERATION STUDY OF A WALMART STORE

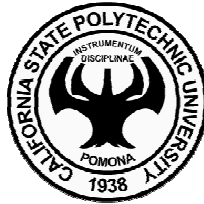
Trip Generation and Parking Demand for Walmart Retail  
Store in Riverside, California

Submitted on:  
May 18, 2012

Prepared for:



Prepared by:



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## SUMMARY ABSTRACT OF FINDINGS

The Institute of Transportation Engineers at California Polytechnic University Pomona (ITECPP) conducted a parking and trip generation study at a local Walmart store. The study consisted of a combined effort by 18 volunteer students with coordination from a university professor working as a mentor. ITECPP's student volunteers were able to enroll into an activity-lab course for this study where they earned two quarter-units for their data collection effort.

As shown in Figure 1, the study site was a Wal-Mart store located at 5200 Van Buren Boulevard in Riverside, California. The data collection took place over the course of two weeks on February 1<sup>st</sup> (Wednesday), February 9<sup>th</sup> (Thursday), and February 14<sup>th</sup> (Tuesday). Data was collected from 7:00 AM to 7:00 PM on each day. Vehicular access to the Wal-Mart is only possible on the eastern side by using one of three possible driveways. The driveways are illustrated in Figures 2, 3, and 4. Delivery trucks used the northeast entrance and were not included in this survey.

Figure 5 shows the summary of total trips for all three days and the corresponding weekday average for each 15-minute period. Table 1 shows the summary of the analyzed data for the AM and PM peak hours periods. The vehicle trips presented in Table 1 are the total number of vehicles entering and exiting. The trip rates for this 130,000 square foot Wal-Mart Store are presented in Table 1 (ranging from 5.72 - 6.98) and are compared to the established rates<sup>1</sup> for land use 813 (Free-Standing Discount Superstore with average A.M. Peak Hour rate of 3.17 and average P.M. Peak hour rate of 4.03). Bicycle trips were low which can be attributed to the lack of bicycle lanes on the adjacent street. As expected, the majority of vehicle trips occurred in the PM peak hour time period and the majority of pedestrian trips occurred in the AM peak hour period.

Figure 6 shows the parking accumulation summary in the Walmart parking lot (732 parking stalls) during the study period for all three days. Table 2 summarizes the peak hour parking generation rates for each study day (ranging from 1.94 - 2.48). The AM peak hour occurred at the same time each day from 10AM - 11AM, while the PM peak hour varied. The parking rate was determined in accordance with current ITE methodology and was compared to the established rate<sup>2</sup> of 1.85 for land use 813 (Free-Standing Discount Superstore).

There is no ITE Land Use code for a Walmart store, but ITE Land Use #813 (Free-Standing Discount Superstore) was used for comparisons. The data collected in this study can be used to provide trip generation information for existing and future Walmart store locations. This information will be shared with the owners as a base for future expansion of the facility. This report can also be used as a reference for possible development of other Walmart stores in similar areas.

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<sup>1</sup> Average Peak Hour of Generator Rates from ITE Trip Generation, 7<sup>th</sup> Edition

<sup>2</sup> ITE Parking Generation, 4<sup>th</sup> Edition

## SITE LOCATION



Figure 1. Location of Walmart store in Riverside, CA.



Figure 2. Southeast Driveway Entrance.



**Figure 3. High-Volume Middle Driveway (Main Entrance).**



**Figure 4. Northeast Drive Entrance.**

## DATA ANALYSIS

*Table 1 – Trip Generation Summary Table*

| Trip Generation |              |                   | Veh. Trips | Trip Rate <sup>1</sup> | ITE Rate <sup>2</sup> | Peds | Bikes <sup>3</sup> | % IN | % OUT | Total Trips |
|-----------------|--------------|-------------------|------------|------------------------|-----------------------|------|--------------------|------|-------|-------------|
| Date            | Time Period  | Time of Peak Hour |            |                        |                       |      |                    |      |       |             |
| 1-Feb           | AM Peak Hour | 11:00AM-12:00PM   | 784        | 6.03                   | 3.17                  | 11   | -                  | 51.3 | 48.7  | 795         |
| 1-Feb           | PM Peak Hour | 5:00PM-6:00PM     | 907        | 6.98                   | 4.03                  | 7    | -                  | 52.2 | 47.8  | 914         |
| 9-Feb           | AM Peak Hour | 11:00AM-12:00PM   | 744        | 5.72                   | 3.17                  | 23   | 4                  | 51.5 | 48.5  | 771         |
| 9-Feb           | PM Peak Hour | 5:00PM-6:00PM     | 829        | 6.38                   | 4.03                  | 18   | 3                  | 47.3 | 52.7  | 850         |
| 14-Feb          | AM Peak Hour | 11:00AM-12:00PM   | 882        | 6.78                   | 3.17                  | 32   | 2                  | 54.4 | 45.6  | 916         |
| 14-Feb          | PM Peak Hour | 1:00PM-2:00PM     | 991        | 7.62                   | 4.03                  | 20   | 3                  | 54   | 46    | 1014        |
| Average         | AM Peak Hour | 11:00AM-12:00PM   | 803        | 6.18                   | 3.17                  | 22   | 3                  | 52.4 | 47.6  | 828         |
| Average         | PM Peak Hour | -                 | 909        | 6.99                   | 4.03                  | 15   | 3                  | 51.2 | 48.8  | 927         |

Note 1: Trip Rate is per 1000 ft.<sup>2</sup> based on total of 130,000 ft.<sup>2</sup> obtained from City of Riverside & Walmart General Manager

Note 2: Average Peak Hour of Generator Rates from ITE Trip Generation, 7<sup>th</sup> Edition

Note 3: Bicycle data was not collected on Feb 1<sup>st</sup>.

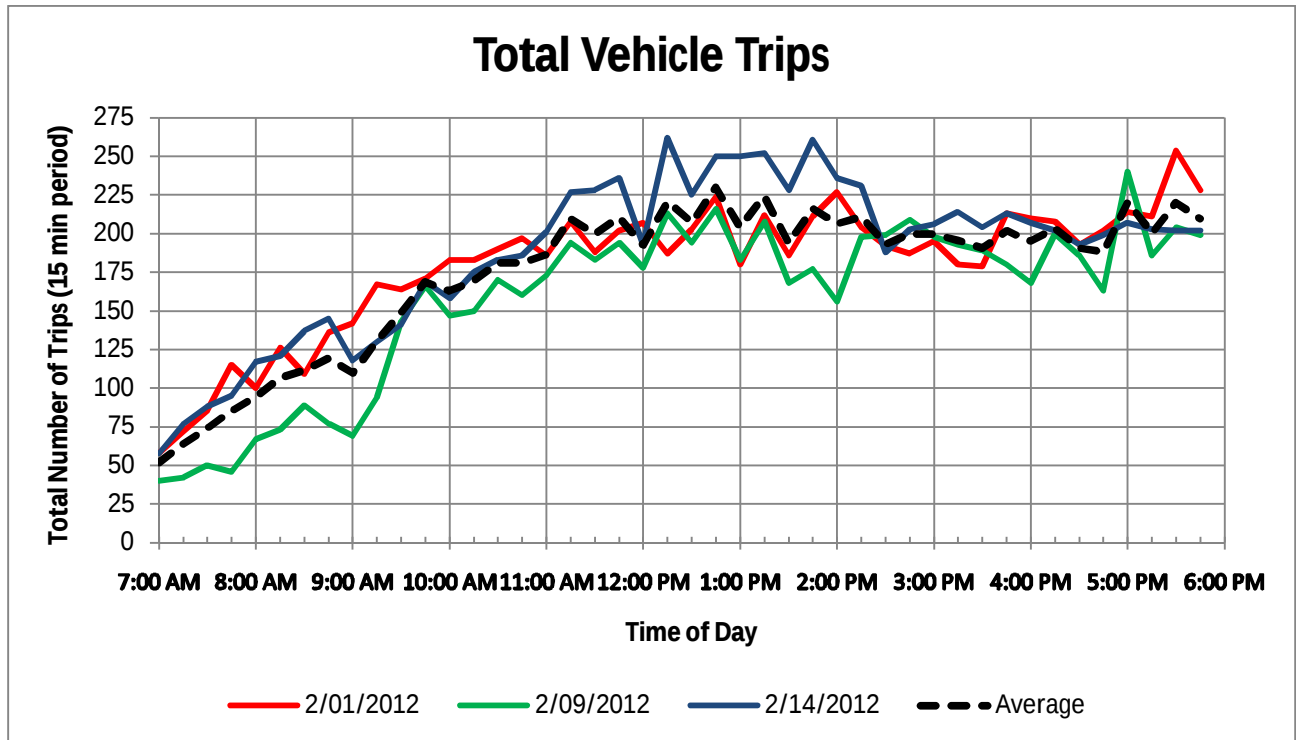


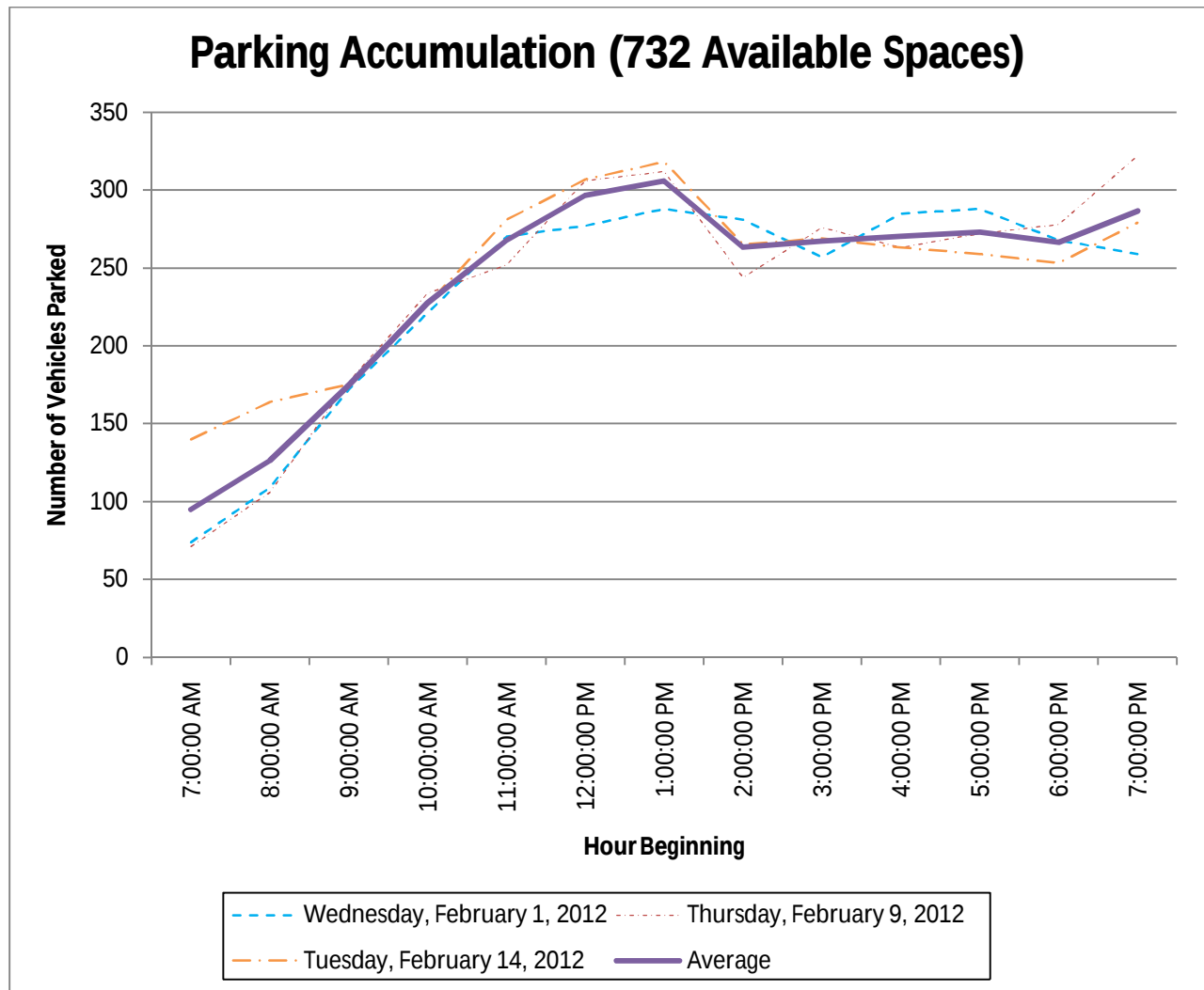
Figure 5. Total Vehicular Trips.

**Table 2 – Parking Generation Summary Table**

| Building      | Data    | Time Period  | Time of Peak Hour | Number Vehicles | Parking Rate <sup>4</sup> | ITE Rate <sup>5</sup> |
|---------------|---------|--------------|-------------------|-----------------|---------------------------|-----------------------|
| Walmart Store | 1-Feb   | AM Peak Hour | 10:00AM-11:00AM   | 270             | 2.08                      | 1.85                  |
|               | 1-Feb   | PM Peak Hour | 12:00PM-1:00PM    | 288             | 2.22                      |                       |
|               | 9-Feb   | AM Peak Hour | 10:00AM-11:00AM   | 252             | 1.94                      | 1.85                  |
|               | 9-Feb   | PM Peak Hour | 6:00PM-7:00PM     | 322             | 2.48                      |                       |
|               | 14-Feb  | AM Peak Hour | 10:00AM-11:00AM   | 281             | 2.16                      | 1.85                  |
|               | 14-Feb  | PM Peak Hour | 12:00PM-1:00PM    | 318             | 2.45                      |                       |
|               | Average | AM Peak Hour | N/A               | 268             | 2.06                      | 1.85                  |
|               |         | PM Peak Hour |                   | 309             | 2.38                      |                       |

Note 4: Parking Rate is per 1000 ft<sup>2</sup> based on total of 130,000 ft<sup>2</sup>

Note 5: ITE Parking Generation, 4<sup>th</sup> edition



**Figure 6. Parking Accumulation Summary for Wal-Mart Parking Lot.**

## **APPENDIX (ITE DATA FORMS)**

# Trip Generation Data Form (Part 1)

|                                                    |                                                |
|----------------------------------------------------|------------------------------------------------|
| Land Use/Building Type: <sup>1</sup> Walmart Store | ITE Land Use Code: N/A                         |
| Source: Walmart Store                              | Source No. (ITE use only):                     |
| Name of Development: Walmart Shopping Center       | Day of the Week: Tuesday-Thursday              |
| City: Riverside                                    | Day: 1st, 9th, 14th Month: February Year: 2012 |
| Country: United States                             | Metropolitan Area: Riverside                   |

## 1. For fast-food land use, please specify if hamburger- or nonhamburger-based.

|                                                                                                                                                                                             |  |                                                                                                                                                                   |                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Location Within Area:                                                                                                                                                                       |  | Detailed Description of Development: <sup>3</sup>                                                                                                                 |                                                                                |
| <input type="checkbox"/> (1) CBD<br><input type="checkbox"/> (2) Urban (Non-CBD)<br><input checked="" type="checkbox"/> (3) Suburban (Non-CBD)<br><input type="checkbox"/> (4) Suburban CBD |  | Wal-Mart is a large discount department store located at 5200 Van Buren Boulevard in Riverside, California. It has designated parking area of 732 parking spaces. |                                                                                |
| Independent Variable: (include data for as many as possible) <sup>2</sup>                                                                                                                   |  | Actual                                                                                                                                                            | Estimated                                                                      |
| 310 (1) Employees (#)                                                                                                                                                                       |  | 732                                                                                                                                                               | (9) Parking Spaces (% occupied: _____) <input checked="" type="checkbox"/>     |
| (2) Persons (#)                                                                                                                                                                             |  |                                                                                                                                                                   | (10) Beds (% occupied: _____) <input type="checkbox"/>                         |
| (3) Total Units (#) (indicate unit: _____)                                                                                                                                                  |  |                                                                                                                                                                   | (11) Seats (#) <input type="checkbox"/>                                        |
| (4) Occupied Units (#) (indicate unit: _____)                                                                                                                                               |  |                                                                                                                                                                   | (12) Servicing Positions/Vehicle Fueling Positions <input type="checkbox"/>    |
| 130000 (5) Gross Floor Area (gross sq. ft.)                                                                                                                                                 |  |                                                                                                                                                                   | (13) Shopping Center % Out-parcels/pads <input type="checkbox"/>               |
| (6) Net Rentable Area (sq. ft.)                                                                                                                                                             |  |                                                                                                                                                                   | (14) A.M. Peak Hour Volume of Adjacent Street Traffic <input type="checkbox"/> |
| (7) Gross Leasable Area (sq. ft.)                                                                                                                                                           |  |                                                                                                                                                                   | (15) P.M. Peak Hour Volume of Adjacent Street Traffic <input type="checkbox"/> |
| (8) Total Acres (% developed: _____)                                                                                                                                                        |  |                                                                                                                                                                   | (16) Other _____ <input type="checkbox"/>                                      |
|                                                                                                                                                                                             |  |                                                                                                                                                                   | (17) Other _____ <input type="checkbox"/>                                      |

## 2. Definitions for several independent variables can be found in the Trip Generation, Second Edition, User's Guide Glossary.

## 3. Please provide all pertinent information to describe the subject project, including the presence of bicycle/pedestrian facilities. To report bicycle/pedestrian volumes, please refer to Part 4 of this data form.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Other Data:                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Transportation Demand Management (TDM) Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Vehicle Occupancy (#):<br>A.M. _____ P.M. _____ 24-hour %<br>Percent by Transit:<br>A.M. % _____ P.M. % _____ 24-hour %<br>Percent by Carpool/Vanpool:<br>A.M. % _____ P.M. % _____ 24-hour %<br>Employees by Shift:<br>First Shift: Start Time _____ End Time _____ Employees (#) _____<br>Second Shift: Start Time _____ End Time _____ Employees (#) _____<br>Third Shift: Start Time _____ End Time _____ Employees (#) _____<br>Parking Cost on Site: Hourly _____ Daily _____ |  | At the time of this study, was there a TDM program (that may have impacted the trip generation characteristics of this site) underway?<br><input checked="" type="checkbox"/> No<br><input type="checkbox"/> Yes (If yes, please check appropriate box/boxes, describe the nature of the TDM program(s) and provide a source for any studies that may help quantify this impact. Attach additional sheets if necessary)<br><input type="checkbox"/> (1) Transit Service<br><input type="checkbox"/> (2) Carpool Programs<br><input type="checkbox"/> (3) Vanpool Programs<br><input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements<br><input type="checkbox"/> (5) Employer Support Measures<br><input type="checkbox"/> (6) Preferential HOV Treatments<br><input type="checkbox"/> (7) Transit and Ridesharing Incentives<br><input type="checkbox"/> (8) Parking Supply and Pricing Management<br><input type="checkbox"/> (9) Tolls and Congestion Pricing<br><input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks<br><input type="checkbox"/> (11) Telecommuting<br><input type="checkbox"/> (12) Other _____ |  |

# Trip Generation Data Form (Part 2)

## Summary of Driveway Volumes

(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)

|                                                                | Average Weekday (M-F) |        |      |        | Saturday |        |     |        | Sunday |        |     |        |
|----------------------------------------------------------------|-----------------------|--------|------|--------|----------|--------|-----|--------|--------|--------|-----|--------|
|                                                                | Enter                 | Exit   |      | Total  | Enter    | Exit   |     | Total  | Enter  | Exit   |     | Total  |
|                                                                | All                   | Trucks | All  | Trucks | All      | Trucks | All | Trucks | All    | Trucks | All | Trucks |
| 24-Hour Volume                                                 | 3958                  |        | 3701 |        | 7659     |        |     |        |        |        |     |        |
| A.M. Peak Hour of Adjacent <sup>1</sup> Street Traffic (7 – 9) | N/A                   |        | N/A  |        | N/A      |        |     |        |        |        |     |        |
| Time (ex.: 7:15 - 8:15):                                       |                       |        |      |        |          |        |     |        |        |        |     |        |
| P.M. Peak Hour of Adjacent <sup>1</sup> Street Traffic (4 – 6) | N/A                   |        | N/A  |        | N/A      |        |     |        |        |        |     |        |
| Time:                                                          |                       |        |      |        |          |        |     |        |        |        |     |        |
| A.M. Peak Hour Generator <sup>2</sup>                          | 421                   |        | 382  |        | 803      |        |     |        |        |        |     |        |
| Time: 11:00-12:00                                              |                       |        |      |        |          |        |     |        |        |        |     |        |
| P.M. Peak Hour Generator <sup>2</sup>                          | 435                   |        | 415  |        | 850      |        |     |        |        |        |     |        |
| Time: 5:00-6:00                                                |                       |        |      |        |          |        |     |        |        |        |     |        |
| Peak Hour Generator <sup>3</sup>                               |                       |        |      |        |          |        |     |        |        |        |     |        |
| Time (Weekend):                                                |                       |        |      |        |          |        |     |        |        |        |     |        |

<sup>1</sup> Highest hourly volume between 7 a.m. and 9 a.m. (4 p.m. and 6 p.m.). Please specify the peak hour.

<sup>2</sup> Highest hourly volume during the a.m. or p.m. period. Please specify the peak hour.

<sup>3</sup> Highest hourly volume during the entire day. Please specify the peak hour.

Please refer to the *Trip Generation User's Guide* for full definition of terms.

## Hourly Driveway Volumes- Average Weekday (M-F)

| A.M. Period | Enter |        | Exit |        | Total |        | Mid-Day Period |        | Enter |        | Exit |        | Total |        | P.M. Period |        | Enter |        | Exit |        | Total |        |
|-------------|-------|--------|------|--------|-------|--------|----------------|--------|-------|--------|------|--------|-------|--------|-------------|--------|-------|--------|------|--------|-------|--------|
|             | All   | Trucks | All  | Trucks | All   | Trucks | All            | Trucks | All   | Trucks | All  | Trucks | All   | Trucks | All         | Trucks | All   | Trucks | All  | Trucks | All   | Trucks |
|             |       |        |      |        |       |        |                |        |       |        |      |        |       |        |             |        |       |        |      |        |       |        |
| 6:00-7:00   |       |        |      |        |       |        | 11:00-12:00    |        | 422   |        | 385  |        | 807   |        | 3:00-4:00   |        | 411   |        | 377  |        | 788   |        |
| 6:15-7:15   |       |        |      |        |       |        | 11:15-12:15    |        | 429   |        | 383  |        | 812   |        | 3:15-4:15   |        | 403   |        | 380  |        | 783   |        |
| 6:30-7:30   |       |        |      |        |       |        | 11:30-12:30    |        | 429   |        | 395  |        | 824   |        | 3:30-4:30   |        | 394   |        | 397  |        | 791   |        |
| 6:45-7:45   |       |        |      |        |       |        | 11:45-12:45    |        | 432   |        | 399  |        | 831   |        | 3:45-4:45   |        | 395   |        | 396  |        | 791   |        |
| 7:00-8:00   | 153   |        | 122  |        | 275   |        | 12:00-1:00     |        | 435   |        | 416  |        | 851   |        | 4:00-5:00   |        | 389   |        | 388  |        | 777   |        |
| 7:15-8:15   | 186   |        | 132  |        | 318   |        | 12:15-1:15     |        | 436   |        | 427  |        | 863   |        | 4:15-5:15   |        | 398   |        | 404  |        | 802   |        |
| 7:30-8:30   | 212   |        | 149  |        | 361   |        | 12:30-1:30     |        | 436   |        | 430  |        | 866   |        | 4:30-5:30   |        | 406   |        | 393  |        | 799   |        |
| 7:45-8:45   | 233   |        | 166  |        | 399   |        | 12:45-1:45     |        | 426   |        | 427  |        | 853   |        | 4:45-5:45   |        | 428   |        | 400  |        | 828   |        |
| 8:00-9:00   | 242   |        | 190  |        | 432   |        | 1:00-2:00      |        | 417   |        | 421  |        | 838   |        | 5:00-6:00   |        | 435   |        | 415  |        | 850   |        |

☒ Check if Part 3, 4 and/or additional information is attached.

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Institute of Transportation Engineers

**Trip Generation Data Form (Part 3)**

**Name/Organization:** ITE Data Collection Team **City/State:** Pomona, California  
**Telephone Number:** (909) 869-3177

*Detailed Driveway Volumes: Attach this sheet to Parts 1 and 2 if you are providing additional information.*

**Day of the week:** Wednesday 2/01/2012 (All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)

| A.M. Period | Enter |        | Exit |        | Total |        | P.M. Period | Enter |        | Exit |        | Total |        |
|-------------|-------|--------|------|--------|-------|--------|-------------|-------|--------|------|--------|-------|--------|
|             | All   | Trucks | All  | Trucks | All   | Trucks |             | All   | Trucks | All  | Trucks | All   | Trucks |
| 12:00-12:15 |       |        |      |        |       |        | 12:00-12:15 | 106   |        | 101  |        | 207   |        |
| 12:15-12:30 |       |        |      |        |       |        | 12:15-12:30 | 102   |        | 85   |        | 187   |        |
| 12:30-12:45 |       |        |      |        |       |        | 12:30-12:45 | 108   |        | 95   |        | 203   |        |
| 12:45-1:00  |       |        |      |        |       |        | 12:45-1:00  | 95    |        | 129  |        | 224   |        |
| 1:00-1:15   |       |        |      |        |       |        | 1:00-1:15   | 94    |        | 86   |        | 180   |        |
| 1:15-1:30   |       |        |      |        |       |        | 1:15-1:30   | 110   |        | 102  |        | 212   |        |
| 1:30-1:45   |       |        |      |        |       |        | 1:30-1:45   | 90    |        | 96   |        | 186   |        |
| 1:45-2:00   |       |        |      |        |       |        | 1:45-2:00   | 110   |        | 101  |        | 211   |        |
| 2:00-2:15   |       |        |      |        |       |        | 2:00-2:15   | 99    |        | 128  |        | 227   |        |
| 2:15-2:30   |       |        |      |        |       |        | 2:15-2:30   | 106   |        | 98   |        | 204   |        |
| 2:30-2:45   |       |        |      |        |       |        | 2:30-2:45   | 96    |        | 96   |        | 192   |        |
| 2:45-3:00   |       |        |      |        |       |        | 2:45-3:00   | 99    |        | 88   |        | 187   |        |
| 3:00-3:15   |       |        |      |        |       |        | 3:00-3:15   | 102   |        | 93   |        | 195   |        |
| 3:15-3:30   |       |        |      |        |       |        | 3:15-3:30   | 101   |        | 79   |        | 180   |        |
| 3:30-3:45   |       |        |      |        |       |        | 3:30-3:45   | 95    |        | 84   |        | 179   |        |
| 3:45-4:00   |       |        |      |        |       |        | 3:45-4:00   | 110   |        | 103  |        | 213   |        |
| 4:00-4:15   |       |        |      |        |       |        | 4:00-4:15   | 107   |        | 103  |        | 210   |        |
| 4:15-4:30   |       |        |      |        |       |        | 4:15-4:30   | 96    |        | 112  |        | 208   |        |
| 4:30-4:45   |       |        |      |        |       |        | 4:30-4:45   | 103   |        | 90   |        | 193   |        |
| 4:45-5:00   |       |        |      |        |       |        | 4:45-5:00   | 102   |        | 100  |        | 202   |        |
| 5:00-5:15   |       |        |      |        |       |        | 5:00-5:15   | 104   |        | 110  |        | 214   |        |
| 5:15-5:30   |       |        |      |        |       |        | 5:15-5:30   | 117   |        | 94   |        | 211   |        |
| 5:30-5:45   |       |        |      |        |       |        | 5:30-5:45   | 146   |        | 108  |        | 254   |        |
| 5:45-6:00   |       |        |      |        |       |        | 5:45-6:00   | 106   |        | 122  |        | 228   |        |
| 6:00-6:15   |       |        |      |        |       |        | 6:00-6:15   |       |        |      |        |       |        |
| 6:15-6:30   |       |        |      |        |       |        | 6:15-6:30   |       |        |      |        |       |        |
| 6:30-6:45   |       |        |      |        |       |        | 6:30-6:45   |       |        |      |        |       |        |
| 6:45-7:00   |       |        |      |        |       |        | 6:45-7:00   |       |        |      |        |       |        |
| 7:00-7:15   | 25    |        | 33   |        | 58    |        | 7:00-7:15   |       |        |      |        |       |        |
| 7:15-7:30   | 42    |        | 30   |        | 72    |        | 7:15-7:30   |       |        |      |        |       |        |
| 7:30-7:45   | 42    |        | 43   |        | 85    |        | 7:30-7:45   |       |        |      |        |       |        |
| 7:45-8:00   | 70    |        | 45   |        | 115   |        | 7:45-8:00   |       |        |      |        |       |        |
| 8:00-8:15   | 58    |        | 42   |        | 100   |        | 8:00-8:15   |       |        |      |        |       |        |
| 8:15-8:30   | 68    |        | 58   |        | 126   |        | 8:15-8:30   |       |        |      |        |       |        |
| 8:30-8:45   | 62    |        | 47   |        | 109   |        | 8:30-8:45   |       |        |      |        |       |        |
| 8:45-9:00   | 74    |        | 62   |        | 136   |        | 8:45-9:00   |       |        |      |        |       |        |
| 9:00-9:15   | 86    |        | 56   |        | 142   |        | 9:00-9:15   |       |        |      |        |       |        |
| 9:15-9:30   | 91    |        | 76   |        | 167   |        | 9:15-9:30   |       |        |      |        |       |        |
| 9:30-9:45   | 84    |        | 80   |        | 164   |        | 9:30-9:45   |       |        |      |        |       |        |
| 9:45-10:00  | 84    |        | 87   |        | 171   |        | 9:45-10:00  |       |        |      |        |       |        |
| 10:00-10:15 | 92    |        | 91   |        | 183   |        | 10:00-10:15 |       |        |      |        |       |        |
| 10:15-10:30 | 90    |        | 93   |        | 183   |        | 10:15-10:30 |       |        |      |        |       |        |
| 10:30-10:45 | 103   |        | 87   |        | 190   |        | 10:30-10:45 |       |        |      |        |       |        |
| 10:45-11:00 | 104   |        | 93   |        | 197   |        | 10:45-11:00 |       |        |      |        |       |        |
| 11:00-11:15 | 101   |        | 85   |        | 186   |        | 11:00-11:15 |       |        |      |        |       |        |
| 11:15-11:30 | 101   |        | 107  |        | 208   |        | 11:15-11:30 |       |        |      |        |       |        |
| 11:30-11:45 | 91    |        | 97   |        | 188   |        | 11:30-11:45 |       |        |      |        |       |        |
| 11:45-12:00 | 109   |        | 93   |        | 202   |        | 11:45-12:00 |       |        |      |        |       |        |



Institute of Transportation Engineers

**Trip Generation Data Form (Part 3)****Name/Organization:** ITE Data Collection Team**City/State:** Pomona, California**Telephone Number:** (909) 869-3177*Detailed Driveway Volumes: Attach this sheet to Parts 1 and 2 if you are providing additional information.***Day of the week:** Thursday 2/09/2012

(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)

| A.M. Period | Enter |        | Exit |        | Total |        | P.M. Period | Enter |        | Exit |        | Total |        |
|-------------|-------|--------|------|--------|-------|--------|-------------|-------|--------|------|--------|-------|--------|
|             | All   | Trucks | All  | Trucks | All   | Trucks |             | All   | Trucks | All  | Trucks | All   | Trucks |
| 12:00-12:15 |       |        |      |        |       |        | 12:00-12:15 | 103   |        | 75   |        | 178   |        |
| 12:15-12:30 |       |        |      |        |       |        | 12:15-12:30 | 103   |        | 110  |        | 213   |        |
| 12:30-12:45 |       |        |      |        |       |        | 12:30-12:45 | 96    |        | 98   |        | 194   |        |
| 12:45-1:00  |       |        |      |        |       |        | 12:45-1:00  | 119   |        | 97   |        | 216   |        |
| 1:00-1:15   |       |        |      |        |       |        | 1:00-1:15   | 104   |        | 79   |        | 183   |        |
| 1:15-1:30   |       |        |      |        |       |        | 1:15-1:30   | 93    |        | 115  |        | 208   |        |
| 1:30-1:45   |       |        |      |        |       |        | 1:30-1:45   | 92    |        | 76   |        | 168   |        |
| 1:45-2:00   |       |        |      |        |       |        | 1:45-2:00   | 85    |        | 92   |        | 177   |        |
| 2:00-2:15   |       |        |      |        |       |        | 2:00-2:15   | 81    |        | 75   |        | 156   |        |
| 2:15-2:30   |       |        |      |        |       |        | 2:15-2:30   | 122   |        | 76   |        | 198   |        |
| 2:30-2:45   |       |        |      |        |       |        | 2:30-2:45   | 106   |        | 93   |        | 199   |        |
| 2:45-3:00   |       |        |      |        |       |        | 2:45-3:00   | 96    |        | 113  |        | 209   |        |
| 3:00-3:15   |       |        |      |        |       |        | 3:00-3:15   | 100   |        | 98   |        | 198   |        |
| 3:15-3:30   |       |        |      |        |       |        | 3:15-3:30   | 103   |        | 90   |        | 193   |        |
| 3:30-3:45   |       |        |      |        |       |        | 3:30-3:45   | 83    |        | 106  |        | 189   |        |
| 3:45-4:00   |       |        |      |        |       |        | 3:45-4:00   | 98    |        | 82   |        | 180   |        |
| 4:00-4:15   |       |        |      |        |       |        | 4:00-4:15   | 84    |        | 84   |        | 168   |        |
| 4:15-4:30   |       |        |      |        |       |        | 4:15-4:30   | 92    |        | 108  |        | 200   |        |
| 4:30-4:45   |       |        |      |        |       |        | 4:30-4:45   | 92    |        | 94   |        | 186   |        |
| 4:45-5:00   |       |        |      |        |       |        | 4:45-5:00   | 91    |        | 72   |        | 163   |        |
| 5:00-5:15   |       |        |      |        |       |        | 5:00-5:15   | 115   |        | 125  |        | 240   |        |
| 5:15-5:30   |       |        |      |        |       |        | 5:15-5:30   | 82    |        | 104  |        | 186   |        |
| 5:30-5:45   |       |        |      |        |       |        | 5:30-5:45   | 96    |        | 108  |        | 204   |        |
| 5:45-6:00   |       |        |      |        |       |        | 5:45-6:00   | 100   |        | 99   |        | 199   |        |
| 6:00-6:15   |       |        |      |        |       |        | 6:00-6:15   |       |        |      |        |       |        |
| 6:15-6:30   |       |        |      |        |       |        | 6:15-6:30   |       |        |      |        |       |        |
| 6:30-6:45   |       |        |      |        |       |        | 6:30-6:45   |       |        |      |        |       |        |
| 6:45-7:00   |       |        |      |        |       |        | 6:45-7:00   |       |        |      |        |       |        |
| 7:00-7:15   | 19    |        | 21   |        | 40    |        | 7:00-7:15   |       |        |      |        |       |        |
| 7:15-7:30   | 22    |        | 20   |        | 42    |        | 7:15-7:30   |       |        |      |        |       |        |
| 7:30-7:45   | 31    |        | 19   |        | 50    |        | 7:30-7:45   |       |        |      |        |       |        |
| 7:45-8:00   | 33    |        | 13   |        | 46    |        | 7:45-8:00   |       |        |      |        |       |        |
| 8:00-8:15   | 40    |        | 27   |        | 67    |        | 8:00-8:15   |       |        |      |        |       |        |
| 8:15-8:30   | 43    |        | 30   |        | 73    |        | 8:15-8:30   |       |        |      |        |       |        |
| 8:30-8:45   | 45    |        | 44   |        | 89    |        | 8:30-8:45   |       |        |      |        |       |        |
| 8:45-9:00   | 41    |        | 36   |        | 77    |        | 8:45-9:00   |       |        |      |        |       |        |
| 9:00-9:15   | 29    |        | 40   |        | 69    |        | 9:00-9:15   |       |        |      |        |       |        |
| 9:15-9:30   | 51    |        | 43   |        | 94    |        | 9:15-9:30   |       |        |      |        |       |        |
| 9:30-9:45   | 74    |        | 69   |        | 143   |        | 9:30-9:45   |       |        |      |        |       |        |
| 9:45-10:00  | 81    |        | 85   |        | 166   |        | 9:45-10:00  |       |        |      |        |       |        |
| 10:00-10:15 | 69    |        | 78   |        | 147   |        | 10:00-10:15 |       |        |      |        |       |        |
| 10:15-10:30 | 65    |        | 85   |        | 150   |        | 10:15-10:30 |       |        |      |        |       |        |
| 10:30-10:45 | 92    |        | 78   |        | 170   |        | 10:30-10:45 |       |        |      |        |       |        |
| 10:45-11:00 | 81    |        | 79   |        | 160   |        | 10:45-11:00 |       |        |      |        |       |        |
| 11:00-11:15 | 81    |        | 92   |        | 173   |        | 11:00-11:15 |       |        |      |        |       |        |
| 11:15-11:30 | 99    |        | 95   |        | 194   |        | 11:15-11:30 |       |        |      |        |       |        |
| 11:30-11:45 | 99    |        | 84   |        | 183   |        | 11:30-11:45 |       |        |      |        |       |        |
| 11:45-12:00 | 104   |        | 90   |        | 194   |        | 11:45-12:00 |       |        |      |        |       |        |



Institute of Transportation Engineers

**Trip Generation Data Form (Part 3)**

**Name/Organization:** ITE Data Collection Team **City/State:** Pomona, California  
**Telephone Number:** (909) 869-3177

*Detailed Driveway Volumes: Attach this sheet to Parts 1 and 2 if you are providing additional information.*

**Day of the week:** Tuesday 2/14/2012 (All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)

| A.M. Period | Enter |        | Exit |        | Total |        | P.M. Period | Enter |        | Exit |        | Total |        |
|-------------|-------|--------|------|--------|-------|--------|-------------|-------|--------|------|--------|-------|--------|
|             | All   | Trucks | All  | Trucks | All   | Trucks |             | All   | Trucks | All  | Trucks | All   | Trucks |
| 12:00-12:15 |       |        |      |        |       |        | 12:00-12:15 | 103   |        | 90   |        | 193   |        |
| 12:15-12:30 |       |        |      |        |       |        | 12:15-12:30 | 131   |        | 131  |        | 262   |        |
| 12:30-12:45 |       |        |      |        |       |        | 12:30-12:45 | 115   |        | 110  |        | 225   |        |
| 12:45-1:00  |       |        |      |        |       |        | 12:45-1:00  | 123   |        | 127  |        | 250   |        |
| 1:00-1:15   |       |        |      |        |       |        | 1:00-1:15   | 117   |        | 133  |        | 250   |        |
| 1:15-1:30   |       |        |      |        |       |        | 1:15-1:30   | 133   |        | 119  |        | 252   |        |
| 1:30-1:45   |       |        |      |        |       |        | 1:30-1:45   | 107   |        | 121  |        | 228   |        |
| 1:45-2:00   |       |        |      |        |       |        | 1:45-2:00   | 117   |        | 144  |        | 261   |        |
| 2:00-2:15   |       |        |      |        |       |        | 2:00-2:15   | 100   |        | 136  |        | 236   |        |
| 2:15-2:30   |       |        |      |        |       |        | 2:15-2:30   | 120   |        | 111  |        | 231   |        |
| 2:30-2:45   |       |        |      |        |       |        | 2:30-2:45   | 98    |        | 90   |        | 188   |        |
| 2:45-3:00   |       |        |      |        |       |        | 2:45-3:00   | 90    |        | 113  |        | 203   |        |
| 3:00-3:15   |       |        |      |        |       |        | 3:00-3:15   | 119   |        | 87   |        | 206   |        |
| 3:15-3:30   |       |        |      |        |       |        | 3:15-3:30   | 110   |        | 104  |        | 214   |        |
| 3:30-3:45   |       |        |      |        |       |        | 3:30-3:45   | 110   |        | 94   |        | 204   |        |
| 3:45-4:00   |       |        |      |        |       |        | 3:45-4:00   | 101   |        | 112  |        | 213   |        |
| 4:00-4:15   |       |        |      |        |       |        | 4:00-4:15   | 107   |        | 100  |        | 207   |        |
| 4:15-4:30   |       |        |      |        |       |        | 4:15-4:30   | 98    |        | 104  |        | 202   |        |
| 4:30-4:45   |       |        |      |        |       |        | 4:30-4:45   | 96    |        | 97   |        | 193   |        |
| 4:45-5:00   |       |        |      |        |       |        | 4:45-5:00   | 99    |        | 100  |        | 199   |        |
| 5:00-5:15   |       |        |      |        |       |        | 5:00-5:15   | 106   |        | 101  |        | 207   |        |
| 5:15-5:30   |       |        |      |        |       |        | 5:15-5:30   | 112   |        | 91   |        | 203   |        |
| 5:30-5:45   |       |        |      |        |       |        | 5:30-5:45   | 114   |        | 88   |        | 202   |        |
| 5:45-6:00   |       |        |      |        |       |        | 5:45-6:00   | 106   |        | 96   |        | 202   |        |
| 6:00-6:15   |       |        |      |        |       |        | 6:00-6:15   |       |        |      |        |       |        |
| 6:15-6:30   |       |        |      |        |       |        | 6:15-6:30   |       |        |      |        |       |        |
| 6:30-6:45   |       |        |      |        |       |        | 6:30-6:45   |       |        |      |        |       |        |
| 6:45-7:00   |       |        |      |        |       |        | 6:45-7:00   |       |        |      |        |       |        |
| 7:00-7:15   | 25    |        | 33   |        | 58    |        | 7:00-7:15   |       |        |      |        |       |        |
| 7:15-7:30   | 42    |        | 35   |        | 77    |        | 7:15-7:30   |       |        |      |        |       |        |
| 7:30-7:45   | 43    |        | 45   |        | 88    |        | 7:30-7:45   |       |        |      |        |       |        |
| 7:45-8:00   | 66    |        | 29   |        | 95    |        | 7:45-8:00   |       |        |      |        |       |        |
| 8:00-8:15   | 68    |        | 49   |        | 117   |        | 8:00-8:15   |       |        |      |        |       |        |
| 8:15-8:30   | 74    |        | 47   |        | 121   |        | 8:15-8:30   |       |        |      |        |       |        |
| 8:30-8:45   | 71    |        | 66   |        | 137   |        | 8:30-8:45   |       |        |      |        |       |        |
| 8:45-9:00   | 83    |        | 62   |        | 145   |        | 8:45-9:00   |       |        |      |        |       |        |
| 9:00-9:15   | 61    |        | 57   |        | 118   |        | 9:00-9:15   |       |        |      |        |       |        |
| 9:15-9:30   | 72    |        | 58   |        | 130   |        | 9:15-9:30   |       |        |      |        |       |        |
| 9:30-9:45   | 74    |        | 67   |        | 141   |        | 9:30-9:45   |       |        |      |        |       |        |
| 9:45-10:00  | 103   |        | 66   |        | 169   |        | 9:45-10:00  |       |        |      |        |       |        |
| 10:00-10:15 | 109   |        | 49   |        | 158   |        | 10:00-10:15 |       |        |      |        |       |        |
| 10:15-10:30 | 93    |        | 82   |        | 175   |        | 10:15-10:30 |       |        |      |        |       |        |
| 10:30-10:45 | 105   |        | 78   |        | 183   |        | 10:30-10:45 |       |        |      |        |       |        |
| 10:45-11:00 | 99    |        | 87   |        | 186   |        | 10:45-11:00 |       |        |      |        |       |        |
| 11:00-11:15 | 107   |        | 84   |        | 191   |        | 11:00-11:15 |       |        |      |        |       |        |
| 11:15-11:30 | 137   |        | 90   |        | 227   |        | 11:15-11:30 |       |        |      |        |       |        |
| 11:30-11:45 | 120   |        | 108  |        | 228   |        | 11:30-11:45 |       |        |      |        |       |        |
| 11:45-12:00 | 116   |        | 120  |        | 236   |        | 11:45-12:00 |       |        |      |        |       |        |

# Institute of Transportation Engineers **Trip Generation Data Form (Part 4)**

## Summary of Bicycle Volumes

|                                                                                               | Average Weekday (M-F) |      |       | Saturday |      |       | Sunday |      |       |
|-----------------------------------------------------------------------------------------------|-----------------------|------|-------|----------|------|-------|--------|------|-------|
|                                                                                               | Enter                 | Exit | Total | Enter    | Exit | Total | Enter  | Exit | Total |
| 24-Hour Volume                                                                                | 20                    | 16   | 36    |          |      |       |        |      |       |
| A.M. Peak Hour of Adjacent <sup>1</sup><br>Street Traffic (7 – 9)<br>Time (ex.: 7:15 - 8:15): | N/A                   | N/A  | N/A   |          |      |       |        |      |       |
| P.M. Peak Hour of Adjacent <sup>1</sup><br>Street Traffic (4 – 6)<br>Time:                    | N/A                   | N/A  | N/A   |          |      |       |        |      |       |
| A.M. Peak Hour Generator <sup>2</sup><br>Time: 11AM-12PM                                      | 3                     | 2    | 5     |          |      |       |        |      |       |
| P.M. Peak Hour Generator <sup>2</sup><br>Time: 12PM-1PM                                       | 3                     | 3    | 6     |          |      |       |        |      |       |
| Peak Hour Generator<br>Time (Weekend):                                                        |                       |      |       |          |      |       |        |      |       |

1. Highest hourly volume between 7 a.m. and 9 a.m. (4 p.m. and 6 p.m.) as defined in Trip Generation Data Form (Part 2). Please specify the peak hour.
2. Highest hourly volume during the a.m. or p.m. period. Please specify the peak hour.
3. Highest hourly volume during the entire day. Please specify the peak hour. Please attach supplemental hourly volumes.

Please refer to the *Trip Generation User's Guide* for full definition of terms.

## Summary of Pedestrian Volumes

|                                                                                               | Average Weekday (M-F) |      |       | Saturday |      |       | Sunday |      |       |
|-----------------------------------------------------------------------------------------------|-----------------------|------|-------|----------|------|-------|--------|------|-------|
|                                                                                               | Enter                 | Exit | Total | Enter    | Exit | Total | Enter  | Exit | Total |
| 24-Hour Volume                                                                                | 104                   | 99   | 203   |          |      |       |        |      |       |
| A.M. Peak Hour of Adjacent <sup>1</sup><br>Street Traffic (7 – 9)<br>Time (ex.: 7:15 - 8:15): | N/A                   | N/A  | N/A   |          |      |       |        |      |       |
| P.M. Peak Hour of Adjacent <sup>1</sup><br>Street Traffic (4 – 6)<br>Time:                    | N/A                   | N/A  | N/A   |          |      |       |        |      |       |
| A.M. Peak Hour Generator <sup>2</sup><br>Time: 9:00-10:00                                     | 13                    | 9    | 22    |          |      |       |        |      |       |
| P.M. Peak Hour Generator <sup>2</sup><br>Time: 3:00-4:00                                      | 18                    | 11   | 29    |          |      |       |        |      |       |
| Peak Hour Generator<br>Time (Weekend):                                                        |                       |      |       |          |      |       |        |      |       |

Survey conducted by: Name: Ryan O'Connell, Project Coordinator

Organization: Cal Poly Pomona ITE

Address: 3801 W. Temple Ave

City/State/Zip: Pomona, CA 91768

Telephone #: \_\_\_\_\_ Fax #: \_\_\_\_\_ E-mail: rdococonnell@csupomona.edu

Please return to: Institute of Transportation Engineers

Technical Projects Division

1627 Eye Street, NW, Suite 600

Washington, DC 20006 USA

Telephone: +1 202-785-0060

Fax: +1 202-785-0609

ITE on the Web: [www.ite.org](http://www.ite.org)



## Parking Demand Survey Form

Institute of Transportation Engineers

(fill in all highlighted cells - \* are required data)

|                           |                                                                  |
|---------------------------|------------------------------------------------------------------|
| Land Use Code*            | 815                                                              |
| Name of Site              | Riverside Walmart                                                |
| Brief Description of Site | Wal-Mart Store has three driveways and is adjacent to McDonald's |
| Transit*                  | YES                                                              |
| Area*                     | SBC                                                              |
| TMP*                      | NO                                                               |
| Parking Price*            | \$ -                                                             |
| City                      | Riverside                                                        |
| State                     | CA                                                               |
| Country                   | Riverside                                                        |
| Daily Rate                | \$ -                                                             |
| Hourly Rate               |                                                                  |

|            |         |        |           |            |      |          |
|------------|---------|--------|-----------|------------|------|----------|
| Site Size* | 130,000 | Units* | sq ft     | Occupancy* | 100% | Land Use |
| Site Size  | 310     | Units  | employees | Occupancy  |      |          |
| Site Size  |         | Units  |           | Occupancy  |      |          |
| Site Size  |         | Units  |           | Occupancy  |      |          |

Number of Parking Spaces Provided at Site 732

### Highest Observed Parking Demand for the following hours of the day (hour beginning)\*

| Date     | 2/1/2012  | 2/9/2012 | 2/14/2012 |  |  |  |
|----------|-----------|----------|-----------|--|--|--|
| Day      | Wednesday | Thursday | Tuesday   |  |  |  |
| 12 Mid   |           |          |           |  |  |  |
| 1:00 AM  |           |          |           |  |  |  |
| 2:00 AM  |           |          |           |  |  |  |
| 3:00 AM  |           |          |           |  |  |  |
| 4:00 AM  |           |          |           |  |  |  |
| 5:00 AM  |           |          |           |  |  |  |
| 6:00 AM  |           |          |           |  |  |  |
| 7:00 AM  | 74        | 71       | 140       |  |  |  |
| 8:00 AM  | 109       | 106      | 164       |  |  |  |
| 9:00 AM  | 172       | 177      | 175       |  |  |  |
| 10:00 AM | 221       | 234      | 227       |  |  |  |
| 11:00 AM | 270       | 252      | 281       |  |  |  |
| 12 Noon  | 277       | 306      | 307       |  |  |  |
| 1:00 PM  | 288       | 312      | 318       |  |  |  |
| 2:00 PM  | 281       | 244      | 265       |  |  |  |
| 3:00 PM  | 257       | 276      | 269       |  |  |  |
| 4:00 PM  | 285       | 263      | 263       |  |  |  |
| 5:00 PM  | 288       | 272      | 259       |  |  |  |
| 6:00 PM  | 268       | 278      | 253       |  |  |  |
| 7:00 PM  | 259       | 322      | 279       |  |  |  |
| 8:00 PM  |           |          |           |  |  |  |
| 9:00 PM  |           |          |           |  |  |  |
| 10:00 PM |           |          |           |  |  |  |
| 11:00 PM |           |          |           |  |  |  |

|        |                                                                        |              |                             |
|--------|------------------------------------------------------------------------|--------------|-----------------------------|
| Person | Ryan O'Connell                                                         | Organization | ITECPP Data Collection Team |
| Phone  | (951) 231 - 3959                                                       |              |                             |
| Fax    |                                                                        |              |                             |
| Email  | <a href="mailto:rdoconnell@csupomona.edu">rdoconnell@csupomona.edu</a> |              |                             |
| Notes  |                                                                        |              |                             |

Enter data on the web at [www.ite.org](http://www.ite.org)

Comments to: [ite\\_staff@ite.org](mailto:ite_staff@ite.org)

IF not entered on web site, please mail to:

Institute of Transportation Engineers, 1627 Eye Street, NW Suite 600; Washington, DC 20006