



# **AGENDA**

## **PARKING AND TRAFFIC COMMISSION**

of the

## **CITY OF HANFORD**

**COUNCIL CHAMBERS**  
**400 N. Douty St.**  
**5:30 PM, Thursday, January 26, 2017**

### **CALL TO ORDER**

### **ROLL CALL**

### **FLAG SALUTE**

### **MINUTES APPROVAL**

- 1. Approve Minutes from October, 27 2016 Parking & Traffic Commission Meeting**

### **PUBLIC COMMENT**

*This is the time for citizens to comment on subject matters not on the agenda and that are within the jurisdiction of the Commission. A maximum of **five minutes** is allowed for each speaker. Please begin your comments by stating your name and providing your city of residence.*

### **STAFF REPORTS**

- 2. Crosswalk on Florinda Street at Sequoia Circle**
- 3. Install All-way Stop on 12th Avenue at Flint Avenue**

### **STAFF COMMUNICATION**

- 4. City Council Actions**

### **COMMISSIONERS ITEMS OF INTEREST**

### **ADJOURNMENT**

Materials related to an item on this Agenda submitted to the Parking & Traffic Commission after distribution of the agenda packet are available to public inspection in the Public Works Office located at 900 S. 10<sup>th</sup> Avenue, Hanford, California 93230, during normal

business hours. Such documents are also available at the city's website, [www.cityofhanfordca.com](http://www.cityofhanfordca.com) subject to staff's ability to post documents before the meeting.

If you need a disability-related modification or accommodation, including auxiliary aids or services, to participate in this meeting, please contact the Public Works office, 559-585-7166, 900 S. 10<sup>th</sup> Avenue, Hanford, California 93230, at least 2 days prior to the meeting {28 CFR 35.102.35.104 ADA Title II}



**AGENDA  
STAFF REPORT**

|                                |                          |
|--------------------------------|--------------------------|
| <b>MEETING DATE:</b> 1/26/2017 | <b>AGENDA SECTION:</b> 1 |
|--------------------------------|--------------------------|

**SUBJECT:**

Approve Minutes from October, 27 2016 Parking & Traffic Commission Meeting

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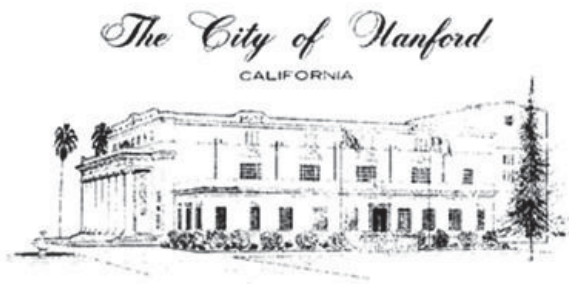
**RECOMMENDATION:**

That the Parking & Traffic Commission, by motion, approve the October 27, 2016 Parking & Traffic Commission minutes.

**FISCAL IMPACT:**

**ATTACHMENTS:**

10.27.16 minutes



**MINUTES**  
**PARKING AND TRAFFIC COMMISSION**  
**of the**  
**CITY OF HANFORD**  
  
**COUNCIL CHAMBERS**  
**400 N. Douty St.**  
**5:30 PM, Thursday, October 27, 2016**

**CALL TO ORDER**

Chairman BUTTS called the meeting to order at 5:38 pm.

**ROLL CALL**

| Attendee Name   | Title         | Status  | Arrived |
|-----------------|---------------|---------|---------|
| Richard Butts   | Chairman      | Present |         |
| Glenda Dwyer    | Commissioner  | Present |         |
| James MacLellan | Vise-Chairman | Present |         |
| Shaka Sudds     |               | Excused |         |
| Alex Dwiggins   | Commissioner  | Present |         |

Also in attendance:  
 Joseph Bonner, III

**FLAG SALUTE**

Chairman BUTTS led the flag salute.

**MINUTES APPROVAL**

**1. Approve Minutes from June 23, 2016 Parking and Traffic Commission Meeting.**

|                  |                                   |
|------------------|-----------------------------------|
| <b>RESULT:</b>   | <b>APPROVED [UNANIMOUS]</b>       |
| <b>MOVER:</b>    | Alex Dwiggins, Commissioner       |
| <b>SECONDER:</b> | Glenda Dwyer, Commissioner        |
| <b>AYES:</b>     | Butts, Dwyer, MacLellan, Dwiggins |

**PUBLIC COMMENT**

*This is the time for citizens to comment on subject matters not on the agenda and that are within the jurisdiction of the Commission. A maximum of **five minutes** is allowed for each speaker. Please begin your comments by stating your name and providing your city of residence.*

Joseph Bonner, III asked Commissioners to address parking issues on Valley Springs Avenue. Mr. Bonner stated that vehicles are parking illegally, bumper facing curb and double and triple parking in the cal-de-sack leaving no room for emergency vehicles. Mr. Bonner also stated that there is alcohol being consumed and that he can smell marijuana coming from this area. Mr. Bonner then stated that he and his neighbors met with the Parks Division in 2006 or 2007 and the Parks Division stated that this street wouldn't be a problem. Mr. Bonner stated he was told that this area was going to be labeled a "loading and unloading zone" but couldn't remember who told him that. Mr. Bonner stated that he has spoken with PD on several occasions.

Staff stated that it is possible to place "parallel parking only" signs however, any restrictions would also restrict home owners in the area. Commissioners asked staff to contact PD to see what could be done regarding the issues.

## **STAFF REPORTS**

### **2. South Street and Phillips Street Two-way Stop**

Staff presented a request for stop signs to be installed on South Street at its intersection with Phillips Street. After a brief discussion Commissioner MacLELLAN made a motion to accept staffs recommendation to install stop signs on east and west bound South Street at Phillips Street and to change section 10.32.010 of the Municipal Code to include the entrance stops at this intersection.

|                  |                                   |
|------------------|-----------------------------------|
| <b>RESULT:</b>   | <b>APPROVED [UNANIMOUS]</b>       |
| <b>MOVER:</b>    | James MacLellan, Vice-Chairman    |
| <b>SECONDER:</b> | Glenda Dwyer, Commissioner        |
| <b>AYES:</b>     | Butts, Dwyer, MacLellan, Dwiggins |

## **STAFF COMMUNICATION**

### **3. City Council Actions**

Staff commented briefly on Actions of the City Council.

## **COMMISSIONERS ITEMS OF INTEREST**

Commissioner MacLELLAN asked staff when the signal at Douty St. and Fargo Ave. will be repaired. Staff informed Commissioner's that the controller has been ordered and should be here and installed in the next 2 weeks.

## **ADJOURNMENT**

Chairman BUTTS adjourned the meeting at 6:32 pm.

Respectfully submitted,

Shawn Dailey, Secretary  
Senior Engineering Technician



## AGENDA STAFF REPORT

|                                |                          |
|--------------------------------|--------------------------|
| <b>MEETING DATE:</b> 1/26/2017 | <b>AGENDA SECTION:</b> 2 |
|--------------------------------|--------------------------|

### **SUBJECT:**

Crosswalk on Florinda Street at Sequoia Circle

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### **RECOMMENDATION:**

That a crosswalk not be placed on Florinda Street at Sequoia Circle.

### **BACKGROUND:**

Staff received a request from Hanford Elementary School District asking if a crosswalk could be placed on Florinda Street at Sequoia Circle. It was stated that students are crossing at this intersection. To address this concern, staff conducted an intersection study of the location.

Florinda Street is an east-west bound two-lane residential street with a curb to curb width of 60 feet. This width is adequate for a single lane in each direction with room for street parking with Florinda Street having the thru movement. Sequoia Circle is a north-south bound two-lane residential street with a curb to curb width of 38 feet. This width is adequate for two lanes in each direction with room for parking with Sequoia Circle having to stop.

The speed limit on Florinda Street is 30 MPH on Sequoia Circle it is prima facie 25 MPH. The 85<sup>th</sup> percentile speed on Florinda Street is 34 MPH with the majority of the traffic volume being on Florinda Street. In the last five years, there have been 1 accident reported at the intersection which evolved a single vehicle hitting a fire hydrant. . The sight stopping distance at the intersection is adequate for north bound Sequoia Circle and westbound Florinda Street however, the sight stopping distance for east bound Florinda Street does not meet the required sight distance and would require additional traffic controls for the condition.

There are 2 schools in the vicinity of the intersection and crosswalks are located approximately 500 feet east and 500' west of the intersection. The crossing to the west is a controlled crossing location. Students from Lee Richmond Elementary School and John F. Kennedy Junior High

School are provided a Suggested Routes to School map at the beginning of the school year which directs them to the crosswalks previously mentioned

The warrant for a crosswalk was checked, and the intersection does not meet the four basic warrants based on the low pedestrian counts, sight visibility for east bound traffic, existing crosswalks in close proximity, and adequate gaps provided.

A gap study was performed to determine the number of opportunities a pedestrian has to cross Florinda Street in the morning and afternoon vehicle peak hours. Based on calculations, a pedestrian will take 15 seconds to cross Florinda Street. The gap study shows that there are 4.5 opportunities in a 5 minute period during the peak vehicle hours for a pedestrian to safely cross the road.

Based on the crosswalk study not meeting the basic warrants, Staff recommends that no additional intersection controls be placed at this time. Attached is an aerial photo of the area, warrant for pedestrian crosswalks, and the entering volume summary.

Respectfully submitted,

Shawn Dailey  
Engineering Technician, II

**FISCAL IMPACT:**

**ATTACHMENTS:**  
JFK crosswalk study

Request for Crosswalk



Google Earth



LOCATION: FLORINDA ST. AT SEQUOIA CIR.WARRANTS FOR PEDESTRIAN CROSSWALKS

In order to qualify for a marked crosswalk, a location must: (A) meet the following basic warrants, and (B) rate 16 points or more under the following point system:

A) Basic WarrantsSATISFIEDPedestrian Volume Warrant

Yes No

**Are there more than 20 pedestrians crossing during peak hour?**

Crosswalks will not be installed where the pedestrian volume is less than 20 pedestrians per hour (pph) during the peak pedestrian hour.

☒ ☐Approach Speed Warrant**Is the 85 percentile less than 45 mph?**

Crosswalks will not be installed on roadways where the 85<sup>th</sup> percentile approach speeds are in excess of 45 mph. The approach speeds shall be determined by approved engineering speed study techniques. All crosswalks installed on roadways in excess of 40 mph will require additional safety improvements (ie. traffic-calming treatments, flashing beacons, and/or rapid flashings signs, etc.)

☒ ☐Visibility Warrant**Is visibility clear for 200'?**

Crosswalks will not be installed unless the motorist has an unrestricted view of all pedestrians at the proposed crosswalk site, for a distance not less than 200' approaching from each direction. Sites with grades, curves and other sight-restrictive features will require special attention.

☐ ☒Illumination Warrant

Proposed crosswalk site must have adequate crosswalk lighting in existence or scheduled for installation prior to the installation of the crosswalk.

☐ ☒**Is there adequate lighting at the site?**B) Warrant point system

Children under 13 years of age, adults over 64 years of age, or disabled persons count as 1.5 pedestrians.

Pedestrian Volume WarrantCriterion
Point Assignment  
Pedestrian Total Points

The total number of pedestrians crossing the street under study during the peak pedestrian hour. This includes pedestrians in both crosswalks at an intersection. Crosswalks will not be installed where the pedestrian volume is 20 pph or less.

|          |    |
|----------|----|
| 0-20     | 0  |
| 21-40    | 2  |
| 41-60    | 4  |
| 61-90    | 6  |
| 91-100   | 8  |
| Over 100 | 10 |
| Maximum  | 10 |

31 TOTAL PEDESTRIANS

2

General Conditions Warrant

|                                                                                                         | Points                                |
|---------------------------------------------------------------------------------------------------------|---------------------------------------|
| (a) Will clarify and define pedestrian routes across a complex Intersection.                            | 2 <input checked="" type="checkbox"/> |
| (b) Will channelize pedestrians into a significantly shorter path.                                      | 2 <input type="checkbox"/>            |
| (c) Will position pedestrians to be seen better by motorists.                                           | 2 <input type="checkbox"/>            |
| (d) Will position pedestrians to expose them to fewer vehicles.                                         | 2 <input type="checkbox"/>            |
| (e) Is located within the Central Business District.                                                    | 2 <input type="checkbox"/>            |
| (f) Is <u>adjacent</u> to a pedestrian generating facility (i.e. school, park, shopping district, etc.) | 4 <input checked="" type="checkbox"/> |
| Maximum                                                                                                 | 10 <u>6</u>                           |

Gap Time Warrant

| Criterion                                                                                                                                                                  | Point Assignment                              |                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------|
|                                                                                                                                                                            | Average number of gaps per five-minute period | Points                                |
| The number of unimpeded vehicle time gaps equal to or exceeding the required pedestrian crossing time (PCT) in an average five minute period during the peak vehicle hour. | 0 – 0.99                                      | 10 <input type="checkbox"/>           |
|                                                                                                                                                                            | 1 – 1.99                                      | 8 <input type="checkbox"/>            |
|                                                                                                                                                                            | 2 – 2.99                                      | 6 <input type="checkbox"/>            |
|                                                                                                                                                                            | 3 – 3.99                                      | 4 <input type="checkbox"/>            |
|                                                                                                                                                                            | 4 – 4.99                                      | 2 <input checked="" type="checkbox"/> |
|                                                                                                                                                                            | 5 or over                                     | 0 <input type="checkbox"/>            |
|                                                                                                                                                                            | Maximum                                       | 10                                    |

2

Computations:

(1) Pedestrian crossing time =  $\frac{\text{Street width curb to curb}}{4.0 \text{ feet per second}}$

$60' = 15 \text{ sec.}$

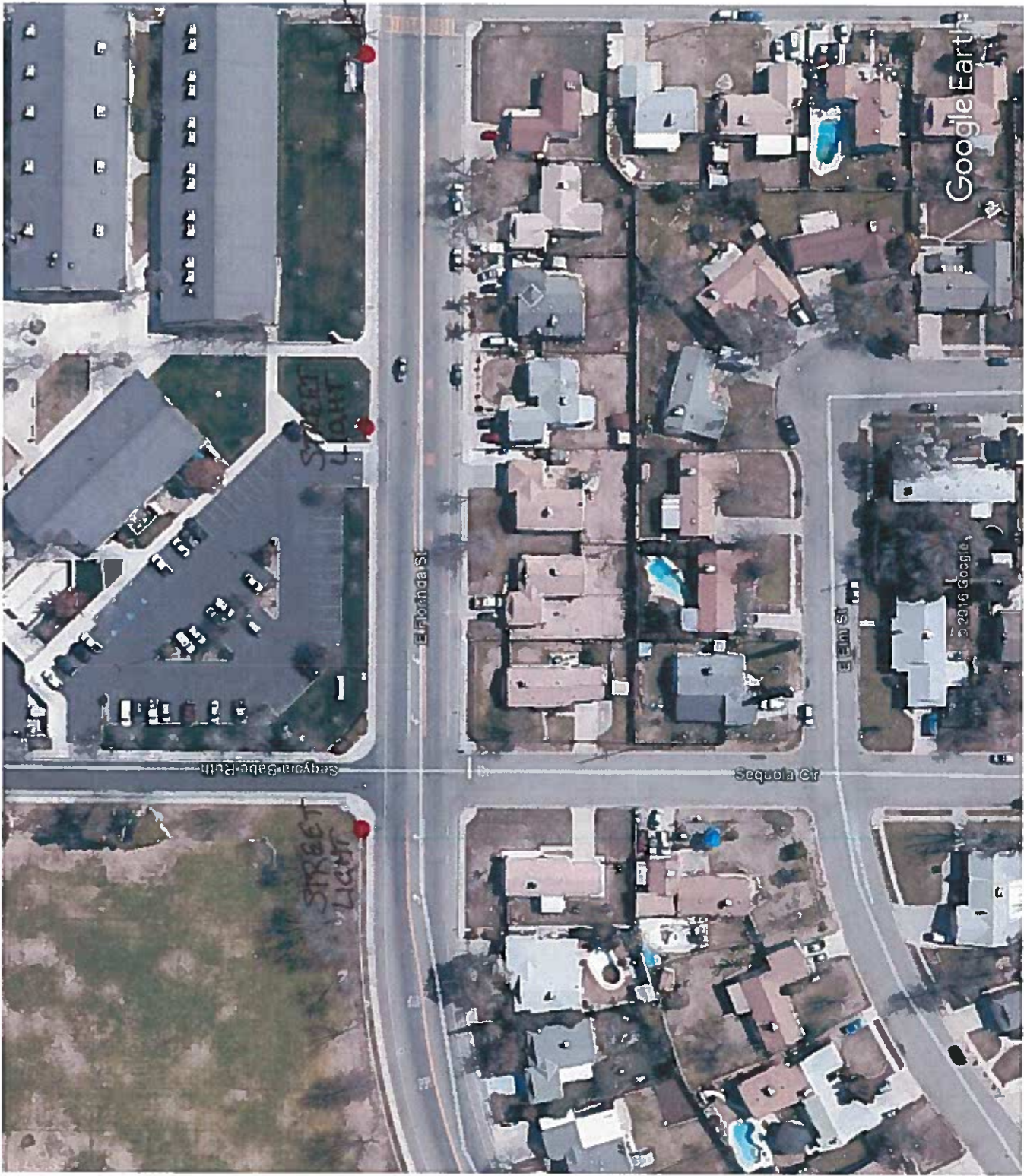
(2) Average number of gaps per five-minute period =  $\frac{\text{Total gaps/hr} > \text{required PCT}}{12}$

$\frac{54}{12} = 4.5$

Provisions:

- (1) The above criterion is based on a one hour field survey.
- (2) All roadways having a raised median or a painted median (4 foot minimum width) will be considered as two separate roadways, if the pedestrian has a protected place to stand out of the path of traffic.

10 pts.

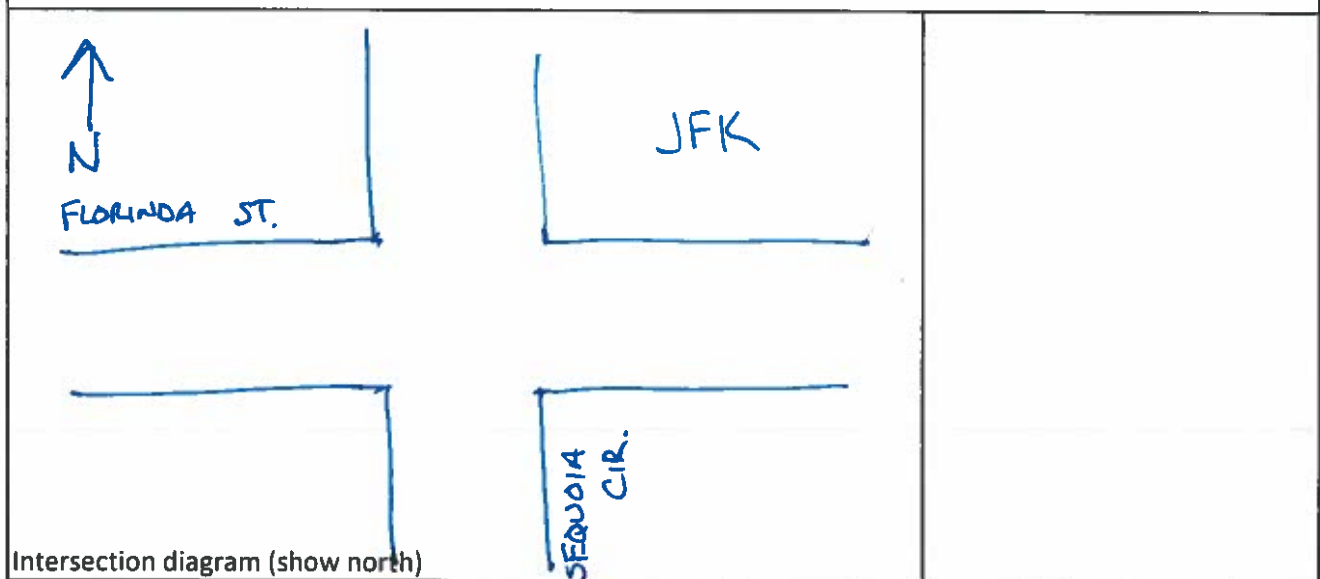


Weather OVERCASTTime Interval (2 hours) 7-9 AMLocation FLORINDA ST. AND SEQUOIA CIR.

| Time (15 minute interval) | Children (thru middle school)               | High School & Adults | Seniors (64+) | Disabled | Total Counts |
|---------------------------|---------------------------------------------|----------------------|---------------|----------|--------------|
| 7:15                      | NNEW                                        | WN                   |               |          |              |
| 7:30                      | EWEWWNNPEWN<br>NWEWWNNNN<br>WE              | WW                   |               |          |              |
| 7:45                      | EEEEEEEEEEWW<br>WEEEEEENEEW<br>WWNEEEENENNE | W                    |               |          |              |
| 8:00                      | EEEEEEWNEEE<br>EENNEEE                      | WE                   |               |          |              |
| 8:15                      | NEE                                         |                      |               |          |              |
| 8:30                      | E                                           |                      |               |          |              |
| 8:45                      |                                             |                      |               |          |              |
| 9:00                      |                                             |                      |               |          |              |
|                           |                                             |                      |               |          |              |
|                           | (20)<br>(x1.5)= 30                          | 1                    | (x1.5)=       | (x1.5)=  |              |

- count and designate which leg of the intersection is being crossed in the boxes above with a N, S, E, or W

- draw and label intersection below

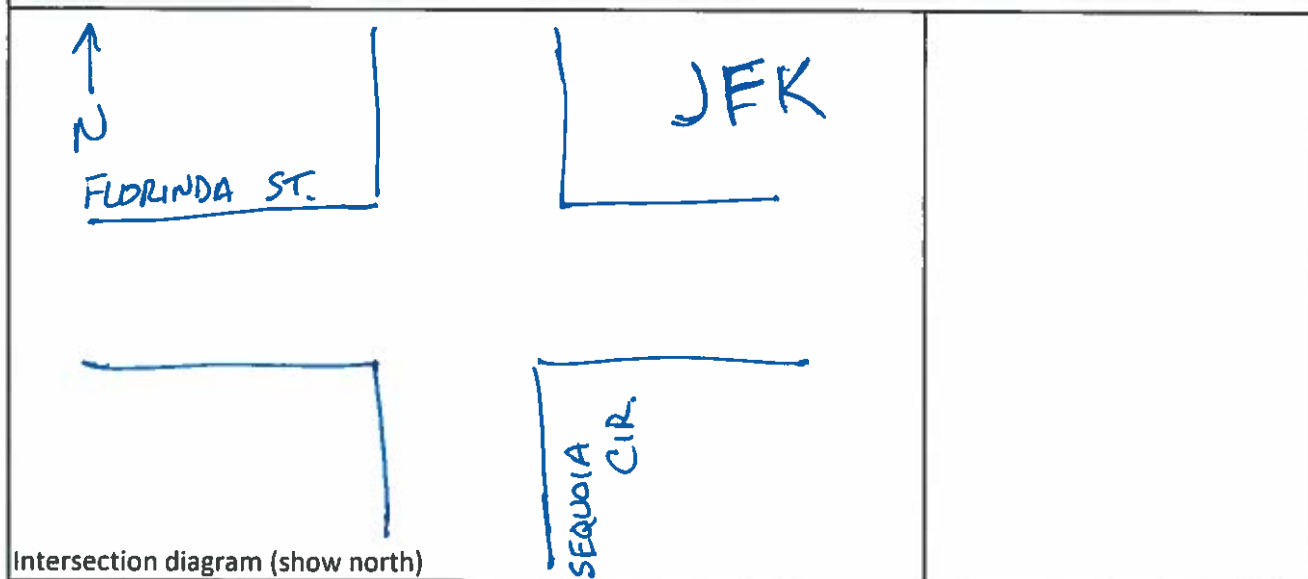


Weather OVERCASTTime Interval (2 hours) 2-4 PMLocation FLORINDA ST. AND SEQUOIA CIR.

| Time (15 minute interval) | Children (thru middle school)                                | High School & Adults | Seniors (64+) | Disabled | Total Counts |
|---------------------------|--------------------------------------------------------------|----------------------|---------------|----------|--------------|
| 2:15                      | W                                                            | FEW                  |               |          |              |
| 2:30                      | S                                                            | EES                  |               |          |              |
| 2:45                      | SE                                                           | N                    |               |          |              |
| 3:00                      | EWEESEEESEF-SW<br>ESSWEEWENWNN<br>WNNWSSWS                   |                      |               |          |              |
| 3:15                      | WNNWNNWSSWNN<br>WNNWNNWNNWWS<br>WNNWNNWNNWNN<br>WSSWNNWNNWNN |                      |               |          |              |
| 3:30                      | WNNWNNWNNW<br>EES EWNSSEEE<br>E                              | EE                   |               |          |              |
| 3:45                      | EEWWWE                                                       | EEW                  |               |          |              |
| 4:00                      | E                                                            | E                    |               |          |              |
|                           |                                                              |                      |               |          |              |
|                           | (17)<br>(x1.5)= 25.5                                         | 3                    | (x1.5)=       | (x1.5)=  |              |

- count and designate which leg of the intersection is being crossed in the boxes above with a N, S, E, or W

- draw and label intersection below



**City of Hanford**  
900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 EB  
Florinda St. e. of Lassen Dr.  
Date Start: 31-Aug-16

| Direction 1 |      | 1     | 16    | 21    | 26    | 31    | 36    | 41    | 46    | 51   | 56   | 61   | 66   | 71   | 76   | Total | 85th    | 95th    |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|-------|---------|---------|
| Start       | Time | 15    | 20    | 25    | 30    | 35    | 40    | 45    | 50    | 55   | 60   | 65   | 70   | 75   | 999  |       | Percent | Percent |
| 08/31/16    |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 01:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 02:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 03:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 04:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 05:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 06:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 07:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 08:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 09:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 10:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *     | *       | *       |
| 11:00       |      | 5     | 4     | 15    | 21    | 12    | 6     | 2     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 65    | 34      | 38      |
| 12 PM       |      | 11    | 6     | 17    | 40    | 16    | 5     | 1     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 96    | 32      | 36      |
| 13:00       |      | 2     | 3     | 15    | 20    | 17    | 8     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 65    | 34      | 37      |
| 14:00       |      | 1     | 4     | 10    | 18    | 9     | 13    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 55    | 36      | 38      |
| 15:00       |      | 2     | 4     | 15    | 27    | 24    | 10    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 82    | 34      | 37      |
| 16:00       |      | 2     | 1     | 19    | 21    | 26    | 9     | 3     | 1     | 0    | 0    | 0    | 0    | 0    | 0    | 82    | 35      | 39      |
| 17:00       |      | 1     | 3     | 20    | 32    | 22    | 15    | 1     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 94    | 35      | 38      |
| 18:00       |      | 3     | 3     | 13    | 30    | 23    | 6     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 78    | 33      | 36      |
| 19:00       |      | 3     | 4     | 14    | 30    | 17    | 7     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 75    | 33      | 37      |
| 20:00       |      | 10    | 7     | 15    | 18    | 12    | 10    | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 72    | 34      | 38      |
| 21:00       |      | 3     | 3     | 16    | 18    | 8     | 3     | 1     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 52    | 32      | 37      |
| 22:00       |      | 2     | 2     | 10    | 7     | 9     | 1     | 0     | 1     | 0    | 0    | 0    | 0    | 0    | 0    | 32    | 33      | 37      |
| 23:00       |      | 1     | 1     | 5     | 10    | 5     | 2     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 24    | 33      | 36      |
| Total       |      | 46    | 45    | 184   | 292   | 200   | 95    | 8     | 2     | 0    | 0    | 0    | 0    | 0    | 0    | 872   |         |         |
| Percent     |      | 5.3%  | 5.2%  | 21.1% | 33.5% | 22.9% | 10.9% | 0.9%  | 0.2%  | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |       |         |         |
| AM Peak     |      | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 |       |      |      |      |      |      |      | 11:00 |         |         |
| Vol.        |      | 5     | 4     | 15    | 21    | 12    | 6     | 2     |       |      |      |      |      |      |      | 65    |         |         |
| PM Peak     |      | 12:00 | 20:00 | 17:00 | 12:00 | 16:00 | 17:00 | 16:00 | 16:00 |      |      |      |      |      |      | 12:00 |         |         |
| Vol.        |      | 11    | 7     | 20    | 40    | 26    | 15    | 3     | 1     |      |      |      |      |      |      | 96    |         |         |

Attachment: JFK crosswalk study (1796 : Florinda-Sequia crosswalk)

# City of Hanford

900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 EB  
Florinda St. e. of Lassen Dr.  
Date Start: 31-Aug-16

| Direction 1 |      | 1     | 16    | 21    | 26    | 31    | 36    | 41    | 46    | 51   | 56   | 61   | 66   | 71   | 76   | 85th    | 95th    |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|---------|---------|
| Start       | Time | 15    | 20    | 25    | 30    | 35    | 40    | 45    | 50    | 55   | 60   | 65   | 70   | 75   | 999  | Percent | Percent |
| 09/01/16    |      | 1     | 0     | 0     | 2     | 3     | 1     | 1     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 8       | 42      |
| 01:00       |      | 0     | 0     | 1     | 0     | 1     | 3     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 5       | 39      |
| 02:00       |      | 1     | 1     | 1     | 0     | 0     | 1     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 4       | 39      |
| 03:00       |      | 1     | 0     | 1     | 0     | 1     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 3       | 34      |
| 04:00       |      | 0     | 0     | 1     | 4     | 0     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 5       | 29      |
| 05:00       |      | 1     | 2     | 2     | 9     | 4     | 3     | 1     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 22      | 39      |
| 06:00       |      | 1     | 3     | 7     | 5     | 7     | 5     | 2     | 0     | 0    | 1    | 0    | 0    | 0    | 0    | 31      | 43      |
| 07:00       |      | 3     | 4     | 18    | 30    | 24    | 7     | 1     | 1     | 0    | 0    | 0    | 0    | 0    | 0    | 88      | 38      |
| 08:00       |      | 4     | 1     | 14    | 15    | 13    | 8     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 55      | 38      |
| 09:00       |      | 2     | 0     | 7     | 10    | 17    | 1     | 2     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 39      | 40      |
| 10:00       |      | 2     | 1     | 3     | 18    | 16    | 8     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 48      | 38      |
| 11:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 12 PM       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 13:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 14:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 15:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 16:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 17:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 18:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 19:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 20:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 21:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 22:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| 23:00       |      | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       |
| Total       |      | 16    | 12    | 55    | 93    | 86    | 37    | 7     | 1     | 0    | 1    | 0    | 0    | 0    | 0    | 308     |         |
| Percent     |      | 5.2%  | 3.9%  | 17.9% | 30.2% | 27.9% | 12.0% | 2.3%  | 0.3%  | 0.0% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% |         |         |
| AM Peak     |      | 08:00 | 07:00 | 07:00 | 07:00 | 07:00 | 08:00 | 06:00 | 07:00 |      |      |      |      |      |      | 07:00   |         |
| Vol.        |      | 4     | 4     | 18    | 30    | 24    | 8     | 2     | 1     |      | 1    |      |      |      |      | 88      |         |
| PM Peak     |      |       |       |       |       |       |       |       |       |      |      |      |      |      |      |         |         |
| Vol.        |      |       |       |       |       |       |       |       |       |      |      |      |      |      |      |         |         |
| Total       |      | 62    | 57    | 239   | 385   | 286   | 132   | 15    | 3     | 0    | 1    | 0    | 0    | 0    | 0    | 1180    |         |
| Percent     |      | 5.3%  | 4.8%  | 20.3% | 32.6% | 24.2% | 11.2% | 1.3%  | 0.3%  | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% |         |         |

## Stats

10 MPH Pace Speed : 26-35 MPH  
Number in Pace : 671  
Percent in Pace : 56.9%  
Number of Vehicles > 30 MPH : 437  
Percent of Vehicles > 30 MPH : 37.0%  
Mean Speed(Average) : 28 MPH

**City of Hanford**  
900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 WB  
Florida St. e. of Lassen Dr.  
Date Start: 31-Aug-16

| Direction 1 |       | 1     | 16    | 21    | 26    | 31    | 36    | 41    | 46    | 51   | 56   | 61   | 66   | 71   | 76   | Total   | 85th    | 95th    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|---------|---------|---------|
| Start Time  | 15    | 20    | 25    | 30    | 35    | 40    | 45    | 50    | 55    | 60   | 65   | 70   | 75   | 80   | 85   | Percent | Percent | Percent |
| 08/31/16    |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |         |         |         |
| 01:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 02:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 03:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 04:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 05:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 06:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 07:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 08:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 09:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 10:00       | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *       | *       | *       |
| 11:00       | 1     | 9     | 21    | 15    | 9     | 6     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 61      | 33      | 37      |
| 12 PM       | 13    | 21    | 30    | 31    | 13    | 3     | 1     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 112     | 30      | 34      |
| 13:00       | 3     | 7     | 18    | 23    | 19    | 3     | 2     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 75      | 33      | 37      |
| 14:00       | 7     | 5     | 11    | 13    | 14    | 4     | 1     | 1     | 1     | 0    | 0    | 0    | 0    | 0    | 0    | 56      | 34      | 39      |
| 15:00       | 2     | 4     | 15    | 12    | 17    | 14    | 4     | 1     | 1     | 0    | 0    | 0    | 0    | 0    | 0    | 69      | 38      | 41      |
| 16:00       | 3     | 4     | 15    | 17    | 19    | 6     | 1     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 65      | 34      | 38      |
| 17:00       | 2     | 5     | 20    | 24    | 24    | 10    | 1     | 1     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 87      | 34      | 38      |
| 18:00       | 2     | 6     | 30    | 29    | 18    | 8     | 2     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 95      | 33      | 38      |
| 19:00       | 8     | 5     | 14    | 18    | 6     | 5     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 56      | 32      | 37      |
| 20:00       | 2     | 5     | 12    | 25    | 5     | 1     | 1     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 52      | 30      | 37      |
| 21:00       | 2     | 2     | 14    | 15    | 14    | 3     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 50      | 33      | 35      |
| 22:00       | 0     | 2     | 9     | 8     | 2     | 2     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 23      | 31      | 37      |
| 23:00       | 0     | 1     | 7     | 4     | 2     | 1     | 0     | 2     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 17      | 37      | 47      |
| Total       | 45    | 76    | 216   | 234   | 162   | 66    | 13    | 5     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 818     |         |         |
| Percent     | 5.5%  | 9.3%  | 26.4% | 28.6% | 19.8% | 8.1%  | 1.6%  | 0.6%  | 0.0%  | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |         |         |         |
| AM Peak     | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 |       |       |       |      |      |      |      |      |      | 11:00   |         |         |
| Vol.        | 1     | 9     | 21    | 15    | 9     | 6     |       |       |       |      |      |      |      |      |      | 61      |         |         |
| PM Peak     | 12:00 | 12:00 | 12:00 | 12:00 | 17:00 | 15:00 | 15:00 | 23:00 | 20:00 |      |      |      |      |      |      | 12:00   |         |         |
| Vol.        | 13    | 21    | 30    | 31    | 24    | 14    | 4     | 2     | 1     |      |      |      |      |      |      | 112     |         |         |

Attachment: JFK crosswalk study (1796 : Florida-Sequia crosswalk)

**City of Hanford**  
900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 WB  
Florida St. e. of Lassen Dr.  
Date Start: 31-Aug-16

## Direction 1

| Start Time | 15    | 16    | 20    | 21    | 25    | 26    | 30    | 31    | 35    | 36    | 40    | 41    | 45    | 46    | 50   | 51   | 55   | 56   | 60   | 61   | 65   | 66   | 70   | 71   | 75   | 76   | 999   | Total | 85th Percent | 95th Percent |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|--------------|--------------|
| 09/01/16   | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 0     | 0     | 1     | 0     | 0     | 0     | 1     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 3     | 47           | 49           |
| 01:00      | 0     | 0     | 0     | 1     | 1     | 1     | 1     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 3     | 32           | 34           |
| 02:00      | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 0     | 0     | 1     | 1     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 2     | 38    | 39           |              |
| 03:00      | 0     | 1     | 0     | 0     | 0     | 1     | 1     | 2     | 2     | 1     | 1     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 5     | 36    | 38           |              |
| 04:00      | 2     | 1     | 4     | 4     | 1     | 4     | 4     | 1     | 1     | 1     | 1     | 1     | 1     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 14    | 34    | 41           |              |
| 05:00      | 2     | 5     | 10    | 6     | 10    | 6     | 6     | 2     | 2     | 3     | 3     | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 28    | 32    | 37           |              |
| 06:00      | 0     | 3     | 16    | 12    | 16    | 12    | 12    | 4     | 4     | 4     | 4     | 4     | 4     | 1     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 44    | 38    | 43           |              |
| 07:00      | 2     | 11    | 34    | 53    | 34    | 53    | 53    | 35    | 35    | 10    | 10    | 1     | 1     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 146   | 33    | 36           |              |
| 08:00      | 3     | 2     | 15    | 15    | 15    | 15    | 15    | 14    | 14    | 12    | 12    | 3     | 3     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 64    | 37    | 39           |              |
| 09:00      | 4     | 2     | 12    | 15    | 12    | 15    | 15    | 10    | 10    | 5     | 5     | 2     | 2     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 50    | 34    | 39           |              |
| 10:00      | 1     | 4     | 7     | 13    | 7     | 13    | 13    | 12    | 12    | 5     | 5     | 2     | 2     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 44    | 35    | 39           |              |
| 11:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 12 PM      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 13:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 14:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 15:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 16:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 17:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 18:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 19:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 20:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 21:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 22:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| 23:00      | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *     | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *    | *     | *     | *            |              |
| Total      | 14    | 29    | 105   | 122   | 99    | 122   | 356   | 81    | 243   | 43    | 109   | 13    | 26    | 2     | 7    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 403   |       |              |              |
| Percent    | 3.5%  | 7.2%  | 8.6%  | 30.3% | 24.6% | 30.3% | 29.2% | 20.1% | 20.1% | 10.7% | 8.9%  | 3.2%  | 2.1%  | 0.5%  | 0.6% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |       |       |              |              |
| AM Peak    | 09:00 | 07:00 | 07:00 | 07:00 | 07:00 | 07:00 | 07:00 | 07:00 | 07:00 | 08:00 | 08:00 | 06:00 | 06:00 | 00:00 |      |      |      |      |      |      |      |      |      |      |      |      | 07:00 |       |              |              |
| PM Peak    | Vol.  | 4     | 11    | 34    | 53    | 53    | 35    | 35    | 12    | 12    | 4     | 4     | 4     | 1     |      |      |      |      |      |      |      |      |      |      |      |      | 146   |       |              |              |
| Vol.       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |       |       |              |              |
| Total      | 59    | 105   | 315   | 356   | 315   | 356   | 243   | 243   | 243   | 109   | 26    | 26    | 26    | 7     | 7    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1221  |       |              |              |
| Percent    | 4.8%  | 8.6%  | 25.8% | 29.2% | 25.8% | 29.2% | 19.9% | 19.9% | 19.9% | 8.9%  | 2.1%  | 2.1%  | 2.1%  | 0.6%  | 0.6% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |       |       |              |              |

## Stats

10 MPH Pace Speed : 21-30 MPH  
Number in Pace : 671  
Percent in Pace : 55.0%  
Number of Vehicles > 30 MPH : 386  
Percent of Vehicles > 30 MPH : 31.6%  
Mean Speed(Average) : 27 MPH

City of Hanford  
900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 EB  
Florida St. e. of Lassen Dr.  
Date Start: 31-Aug-16

| Direction 1 |    | 1  | 5  | 7  | 9  | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29  |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| Start Time  |    | 4  | 6  | 8  | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 999 |
| 08/31/16    | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 01:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 02:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 03:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 04:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 05:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 06:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 07:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 08:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 09:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 10:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 11:00       | 8  | 2  | 0  | 2  | 3  | 3  | 1  | 0  | 3  | 4  | 0  | 2  | 0  | 2  | 38  |
| 12 PM       | 12 | 11 | 4  | 6  | 2  | 2  | 5  | 3  | 3  | 1  | 6  | 0  | 1  | 2  | 40  |
| 13:00       | 5  | 2  | 0  | 3  | 2  | 2  | 1  | 3  | 1  | 2  | 1  | 0  | 1  | 1  | 43  |
| 14:00       | 5  | 3  | 1  | 2  | 0  | 0  | 1  | 3  | 1  | 1  | 0  | 1  | 0  | 1  | 36  |
| 15:00       | 13 | 4  | 4  | 4  | 1  | 1  | 1  | 1  | 1  | 1  | 4  | 7  | 0  | 3  | 38  |
| 16:00       | 15 | 2  | 2  | 2  | 2  | 4  | 1  | 1  | 3  | 5  | 2  | 3  | 2  | 0  | 40  |
| 17:00       | 10 | 4  | 2  | 3  | 3  | 2  | 6  | 4  | 1  | 2  | 3  | 3  | 4  | 0  | 50  |
| 18:00       | 7  | 3  | 2  | 2  | 6  | 3  | 2  | 3  | 2  | 2  | 1  | 1  | 3  | 0  | 43  |
| 19:00       | 6  | 8  | 3  | 2  | 2  | 2  | 5  | 2  | 3  | 0  | 2  | 1  | 3  | 1  | 37  |
| 20:00       | 8  | 3  | 7  | 3  | 3  | 1  | 2  | 0  | 0  | 3  | 0  | 2  | 1  | 2  | 40  |
| 21:00       | 7  | 1  | 1  | 2  | 2  | 2  | 0  | 3  | 0  | 2  | 1  | 0  | 1  | 3  | 29  |
| 22:00       | 3  | 1  | 1  | 0  | 0  | 0  | 1  | 0  | 1  | 1  | 1  | 1  | 0  | 0  | 22  |
| 23:00       | 0  | 1  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 1  | 0  | 3  | 0  | 18  |
| Total       | 99 | 45 | 27 | 35 | 22 | 22 | 27 | 23 | 19 | 24 | 22 | 21 | 19 | 15 | 474 |

Attachment: JFK crosswalk study (1796 : Florida-Sequia crosswalk)

**City of Hanford**  
900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 EB  
Florinda St. e. of Lassen Dr.  
Date Start: 31-Aug-16

| Direction 1 | Start Time | 1   | 5  | 7  | 9  | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29  |
|-------------|------------|-----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
|             |            | 4   | 6  | 8  | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 999 |
| 09/01/16    |            | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 8   |
| 01:00       |            | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 5   |
| 02:00       |            | 0   | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 3   |
| 03:00       |            | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 3   |
| 04:00       |            | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 5   |
| 05:00       |            | 0   | 0  | 2  | 0  | 1  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 18  |
| 06:00       |            | 2   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 1  | 26  |
| 07:00       |            | 9   | 6  | 4  | 2  | 6  | 5  | 3  | 4  | 4  | 2  | 1  | 1  | 3  | 38  |
| 08:00       |            | 9   | 2  | 2  | 1  | 2  | 0  | 0  | 4  | 1  | 2  | 2  | 0  | 2  | 28  |
| 09:00       |            | 0   | 0  | 0  | 1  | 3  | 2  | 1  | 0  | 0  | 2  | 1  | 1  | 1  | 27  |
| 10:00       |            | 4   | 3  | 3  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 0  | 34  |
| 11:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 12 PM       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 13:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 14:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 15:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 16:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 17:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 18:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 19:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 20:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 21:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 22:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 23:00       |            | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| Total       |            | 24  | 11 | 11 | 5  | 12 | 8  | 4  | 8  | 5  | 9  | 6  | 3  | 7  | 195 |
| Grand Total |            | 123 | 56 | 38 | 40 | 34 | 35 | 27 | 27 | 29 | 31 | 27 | 22 | 22 | 669 |

Attachment: JFK crosswalk study (1796 : Florinda-Sequia crosswalk)

**City of Hanford**  
900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 WB  
Florida St. e. of Lassen Dr.  
Date Start: 31-Aug-16

| Direction 1 |    | 1  | 5  | 7  | 9  | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29  |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| Start Time  |    | 4  | 6  | 8  | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 999 |
| 08/31/16    |    | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 01:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 02:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 03:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 04:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 05:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 06:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 07:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 08:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 09:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 10:00       | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 11:00       | 4  | 4  | 3  | 3  | 1  | 2  | 1  | 4  | 0  | 1  | 2  | 0  | 1  | 1  | 37  |
| 12 PM       | 24 | 10 | 7  | 5  | 7  | 7  | 1  | 2  | 4  | 1  | 4  | 3  | 1  | 1  | 42  |
| 13:00       | 9  | 5  | 4  | 3  | 3  | 3  | 2  | 1  | 1  | 1  | 1  | 4  | 2  | 1  | 38  |
| 14:00       | 8  | 4  | 0  | 4  | 2  | 2  | 0  | 0  | 1  | 2  | 1  | 0  | 2  | 2  | 30  |
| 15:00       | 3  | 2  | 2  | 3  | 2  | 2  | 3  | 5  | 1  | 1  | 3  | 1  | 1  | 1  | 41  |
| 16:00       | 4  | 3  | 3  | 5  | 0  | 0  | 1  | 3  | 1  | 1  | 5  | 2  | 0  | 1  | 36  |
| 17:00       | 7  | 6  | 3  | 2  | 1  | 1  | 4  | 5  | 1  | 4  | 0  | 3  | 0  | 3  | 48  |
| 18:00       | 11 | 11 | 10 | 3  | 2  | 2  | 3  | 4  | 0  | 3  | 2  | 1  | 2  | 2  | 41  |
| 19:00       | 5  | 7  | 0  | 2  | 0  | 0  | 1  | 0  | 1  | 2  | 0  | 1  | 1  | 0  | 36  |
| 20:00       | 4  | 5  | 0  | 3  | 0  | 0  | 0  | 0  | 1  | 0  | 2  | 1  | 1  | 0  | 35  |
| 21:00       | 2  | 0  | 2  | 2  | 1  | 1  | 1  | 1  | 0  | 1  | 0  | 1  | 2  | 0  | 37  |
| 22:00       | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 21  |
| 23:00       | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 17  |
| Total       | 81 | 57 | 34 | 33 | 20 | 20 | 17 | 25 | 11 | 17 | 20 | 18 | 14 | 12 | 459 |

Attachment: JFK crosswalk study (1796 : Florida-Sequia crosswalk)

**City of Hanford**  
900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 WB  
Florinda St. e. of Lassen Dr.  
Date Start: 31-Aug-16

| Direction 1 | 1   | 5  | 7  | 9  | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29  |
|-------------|-----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| Start Time  | 4   | 6  | 8  | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 999 |
| 09/01/16    | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 3   |
| 01:00       | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 3   |
| 02:00       | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 2   |
| 03:00       | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 5   |
| 04:00       | 1   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 13  |
| 05:00       | 1   | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 24  |
| 06:00       | 3   | 1  | 2  | 1  | 0  | 1  | 2  | 0  | 1  | 1  | 2  | 1  | 0  | 29  |
| 07:00       | 31  | 12 | 15 | 8  | 9  | 9  | 3  | 4  | 2  | 4  | 7  | 4  | 3  | 35  |
| 08:00       | 6   | 3  | 3  | 1  | 2  | 1  | 2  | 3  | 0  | 4  | 0  | 0  | 1  | 38  |
| 09:00       | 5   | 2  | 0  | 2  | 0  | 0  | 0  | 2  | 3  | 1  | 3  | 0  | 0  | 32  |
| 10:00       | 1   | 3  | 1  | 1  | 0  | 2  | 0  | 1  | 0  | 0  | 2  | 0  | 2  | 31  |
| 11:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 12 PM       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 13:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 14:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 15:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 16:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 17:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 18:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 19:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 20:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 21:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 22:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| 23:00       | *   | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *   |
| Total       | 48  | 21 | 21 | 14 | 11 | 14 | 7  | 10 | 6  | 10 | 14 | 6  | 6  | 215 |
| Grand Total | 129 | 78 | 55 | 47 | 31 | 31 | 32 | 21 | 23 | 30 | 32 | 20 | 18 | 674 |

Attachment: JFK crosswalk study (1796 : Florinda-Sequia crosswalk)

## City of Hanford

900 S. 10th Avenue  
Hanford, CA 93230Site Code: 064 FY EB  
Florinda St. e. of Lassen Dr.  
Date Start: 31-Aug-16

| Start Time      | Mon<br>29-Aug-16 | Tue  | Wed        | Thu   | Fri  | Average<br>Day | Sat  | Sun  | Week<br>Average |
|-----------------|------------------|------|------------|-------|------|----------------|------|------|-----------------|
| 12:00 AM        | *                | *    | *          | 8     | *    | 8              | *    | *    | 8               |
| 01:00           | *                | *    | *          | 5     | *    | 5              | *    | *    | 5               |
| 02:00           | *                | *    | *          | 4     | *    | 4              | *    | *    | 4               |
| 03:00           | *                | *    | *          | 3     | *    | 3              | *    | *    | 3               |
| 04:00           | *                | *    | *          | 5     | *    | 5              | *    | *    | 5               |
| 05:00           | *                | *    | *          | 22    | *    | 22             | *    | *    | 22              |
| 06:00           | *                | *    | *          | 31    | *    | 31             | *    | *    | 31              |
| 07:00           | *                | *    | *          | 88    | *    | 88             | *    | *    | 88              |
| 08:00           | *                | *    | *          | 55    | *    | 55             | *    | *    | 55              |
| 09:00           | *                | *    | *          | 39    | *    | 39             | *    | *    | 39              |
| 10:00           | *                | *    | *          | 48    | *    | 48             | *    | *    | 48              |
| 11:00           | *                | *    | 65         | *     | *    | 65             | *    | *    | 65              |
| 12:00 PM        | *                | *    | 96         | *     | *    | 96             | *    | *    | 96              |
| 01:00           | *                | *    | 65         | *     | *    | 65             | *    | *    | 65              |
| 02:00           | *                | *    | 55         | *     | *    | 55             | *    | *    | 55              |
| 03:00           | *                | *    | 82         | *     | *    | 82             | *    | *    | 82              |
| 04:00           | *                | *    | 82         | *     | *    | 82             | *    | *    | 82              |
| 05:00           | *                | *    | 94         | *     | *    | 94             | *    | *    | 94              |
| 06:00           | *                | *    | 78         | *     | *    | 78             | *    | *    | 78              |
| 07:00           | *                | *    | 75         | *     | *    | 75             | *    | *    | 75              |
| 08:00           | *                | *    | 72         | *     | *    | 72             | *    | *    | 72              |
| 09:00           | *                | *    | 52         | *     | *    | 52             | *    | *    | 52              |
| 10:00           | *                | *    | 32         | *     | *    | 32             | *    | *    | 32              |
| 11:00           | *                | *    | 24         | *     | *    | 24             | *    | *    | 24              |
| Total           | 0                | 0    | 872        | 308   | 0    | 1180           | 0    | 0    | 1180            |
| % Avg.<br>WkDay | 0.0%             | 0.0% | 73.9%      | 26.1% | 0.0% | 100.0%         |      |      |                 |
| % Avg.<br>Week  | 0.0%             | 0.0% | 73.9%      | 26.1% | 0.0% | 100.0%         | 0.0% | 0.0% |                 |
| AM Peak         | -                | -    | 11:00      | 07:00 | -    | 07:00          | -    | -    | 07:00           |
| Vol.            | -                | -    | 65         | 88    | -    | 88             | -    | -    | 88              |
| PM Peak         | -                | -    | 12:00      | -     | -    | 12:00          | -    | -    | 12:00           |
| Vol.            | -                | -    | 96         | -     | -    | 96             | -    | -    | 96              |
| Total           | 0                | 0    | 872        | 308   | 0    | 1180           | 0    | 0    | 1180            |
| ADT             | ADT 1,120        |      | AADT 1,120 |       |      |                |      |      |                 |

**City of Hanford**900 S. 10th Avenue  
Hanford, CA 93230

Site Code: 064 FY16 WB

Date Start: 31-Aug-16

| Start Time      | Mon<br>29-Aug-16 | Tue  | Wed        | Thu   | Fri  | Average<br>Day | Sat  | Sun  | Week<br>Average |
|-----------------|------------------|------|------------|-------|------|----------------|------|------|-----------------|
| 12:00 AM        | *                | *    | *          | 3     | *    | 3              | *    | *    | 3               |
| 01:00           | *                | *    | *          | 3     | *    | 3              | *    | *    | 3               |
| 02:00           | *                | *    | *          | 2     | *    | 2              | *    | *    | 2               |
| 03:00           | *                | *    | *          | 5     | *    | 5              | *    | *    | 5               |
| 04:00           | *                | *    | *          | 14    | *    | 14             | *    | *    | 14              |
| 05:00           | *                | *    | *          | 28    | *    | 28             | *    | *    | 28              |
| 06:00           | *                | *    | *          | 44    | *    | 44             | *    | *    | 44              |
| 07:00           | *                | *    | 146        | *     | *    | 146            | *    | *    | 146             |
| 08:00           | *                | *    | *          | 64    | *    | 64             | *    | *    | 64              |
| 09:00           | *                | *    | *          | 50    | *    | 50             | *    | *    | 50              |
| 10:00           | *                | *    | *          | 44    | *    | 44             | *    | *    | 44              |
| 11:00           | *                | *    | 61         | *     | *    | 61             | *    | *    | 61              |
| 12:00 PM        | *                | *    | 112        | *     | *    | 112            | *    | *    | 112             |
| 01:00           | *                | *    | 75         | *     | *    | 75             | *    | *    | 75              |
| 02:00           | *                | *    | 56         | *     | *    | 56             | *    | *    | 56              |
| 03:00           | *                | *    | 69         | *     | *    | 69             | *    | *    | 69              |
| 04:00           | *                | *    | 65         | *     | *    | 65             | *    | *    | 65              |
| 05:00           | *                | *    | 87         | *     | *    | 87             | *    | *    | 87              |
| 06:00           | *                | *    | 95         | *     | *    | 95             | *    | *    | 95              |
| 07:00           | *                | *    | 56         | *     | *    | 56             | *    | *    | 56              |
| 08:00           | *                | *    | 52         | *     | *    | 52             | *    | *    | 52              |
| 09:00           | *                | *    | 50         | *     | *    | 50             | *    | *    | 50              |
| 10:00           | *                | *    | 23         | *     | *    | 23             | *    | *    | 23              |
| 11:00           | *                | *    | 17         | *     | *    | 17             | *    | *    | 17              |
| Total           | 0                | 0    | 818        | 403   | 0    | 1221           | 0    | 0    | 1221            |
| % Avg.<br>WkDay | 0.0%             | 0.0% | 67.0%      | 33.0% | 0.0% | 100.0%         |      |      |                 |
| % Avg.<br>Week  | 0.0%             | 0.0% | 67.0%      | 33.0% | 0.0% | 100.0%         | 0.0% | 0.0% |                 |
| AM Peak         | -                | -    | 11:00      | 07:00 | -    | 07:00          | -    | -    | 07:00           |
| Vol.            | -                | -    | 61         | 146   | -    | 146            | -    | -    | 146             |
| PM Peak         | -                | -    | 12:00      | -     | -    | 12:00          | -    | -    | 12:00           |
| Vol.            | -                | -    | 112        | -     | -    | 112            | -    | -    | 112             |
| Total           | 0                | 0    | 818        | 403   | 0    | 1221           | 0    | 0    | 1221            |
| ADT             | ADT 1,156        |      | AADT 1,156 |       |      |                |      |      |                 |

|                                |                |
|--------------------------------|----------------|
| Case Number: 161336            | Date: 3/5/2016 |
| Location: Florinda and Sequoia |                |
| Description:<br>By 1472        |                |



## AGENDA STAFF REPORT

|                                |                          |
|--------------------------------|--------------------------|
| <b>MEETING DATE:</b> 1/26/2017 | <b>AGENDA SECTION:</b> 3 |
|--------------------------------|--------------------------|

### **SUBJECT:**

Install All-way Stop on 12th Avenue at Flint Avenue

---

### **RECOMMENDATION:**

That the Parking & Traffic Commission make a recommendation to the City Council to authorize King's County Public Works to move forward with the installation of an All-way Stop on 12th Avenue at Flint Avenue and to change Section 10.32.010 of the Hanford Municipal Code to include an All-way Stop at this intersection.

### **BACKGROUND:**

The Kings County, Public Works Department has asked the City of Hanford for concurrence to proceed with a project to place an All-way Stop on 12th Avenue at Flint Avenue. Kings County contracted JLB Traffic Engineering, Inc., of Fresno, CA to conduct a study of the intersection of 12th Avenue and Flint Avenue.

JLB conducted the intersection study in November 2016. The study has concluded that the intersection of 12th Avenue and Flint Avenue does meet King's County's warrants for an All-way Stop. Staff would recommend the Parking & Traffic Commission ask City Council to allow King's County to move forward with the project to install an All-Way Stop at the intersection of 12th Avenue and Flint Avenue and to change Section 10.32.010 of the Hanford Municipal Code to include this intersection.

Respectfully submitted,

Shawn Dailey  
Secretary,

Engineering Technician, II

**FISCAL IMPACT:**

**ATTACHMENTS:**

12th-Flint

December 29, 2016

Dominic Tyburski, P.E.  
Kings County, Public Works Department  
1400 W. Lacey Blvd.  
Hanford, CA 93230

Via email only: Dominic.Tyburski@co.kings.ca.us

**Subject: 12th Avenue at Flint Avenue Traffic Safety Audit (Project 002-007)**

Dear Mr. Dominic Tyburski,

JLB Traffic Engineering, Inc. (JLB) has completed the preparation of the Traffic Safety Audit (TSA) for the intersection of 12th Avenue at Flint Avenue in Kings County. As part of the TSA, JLB completed the following tasks: 1) Collect Traffic Counts, 2) Collect 85<sup>th</sup> Percentile Speeds, 3) Collision History Analysis, and 4) Preparation of Warrants (Multi-Way STOP/Signal). These tasks were prepared pursuant to the 2014 Edition of the California Manual on Uniform Traffic Control Devices (CA MUTCD).

The purpose of the preparation of this intersection TSA is to provide Kings County with an independent evaluation, findings, and recommendations to help improve traffic safety at the intersection of 12th Avenue at Flint Avenue. This letter along with its appendices provides the data and findings utilized to complete the intersection TSA.

## Introduction

This letter presents the results of JLB's TSA of the intersection of 12th Avenue at Flint Avenue in Kings County. The TSA includes the collection of traffic counts, a radar speed survey, collision analyses, and an analysis of roadway conditions for the intersection of 12th Avenue at Flint Avenue. The subject intersection has experienced an apparent operational degradation in the past few years and the County has requested an independent intersection TSA along with recommendations to improve intersection safety, if any. Therefore, the purpose of this TSA is to evaluate if the intersection has the appropriate intersection traffic controls in conformance with the CA MUTCD.

## Traffic Counts

One of the first steps in the preparation of the TSA was to collect new 24-hour volume counts for the project intersection. These counts were collected during non-inclement weather, when schools in the area were in session, and when roadway conditions did not impact travel patterns. The 24-hour volume counts were collected on Tuesday, November 15, 2016. The 24-hour volume counts collected for this TSA are listed below.

- Flint Avenue west of 12th Avenue



TRAFFIC ENGINEERING, INC.

Traffic Engineering, Transportation Planning & Parking Solutions

www.JLBtraffic.com

info@JLBtraffic.com

1300 E. Shaw Ave., Ste. 103

Fresno, CA 93710

(559) 570-8991

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Attachment: 12th-Flint (1795 : 12th-Flint stop)

Mr. Dominic Tyburski

12th Avenue at Flint Avenue – Intersection Traffic Safety Audit

December 29, 2016

- Flint Avenue east of 12th Avenue
- 12th Avenue south of Flint Avenue
- 12th Avenue north of Flint Avenue

The intersection turning movement count was collected between the hours of 7:00 AM and 9:00 AM, and 4:00 PM and 6:00 PM on Tuesday, November 15, 2016. The 24-hour volume counts and intersection turning movement count are included in Appendix A.

### 85<sup>th</sup> Percentile and Posted Speeds

A crucial component of the intersection TSA was to determine the 85<sup>th</sup> percentile speeds of the major street, in this case 12th Avenue, and the posted speed limits of both cross streets. The 85<sup>th</sup> percentile speeds were utilized to determine the critical speed of the major street. Based on the speed surveys, the 85<sup>th</sup> percentile speeds for 12th Avenue were observed to be 64 MPH and 68 MPH for the northbound and southbound approaches, respectively. The 85<sup>th</sup> percentile spot speed studies are contained in Appendix B. The posted speed limit for both legs of 12th Avenue is 55 MPH, and the prima facie speed limit for both legs of Flint Avenue is 55 MPH.

Based on the 85<sup>th</sup> percentile speeds, speeds on 12th Avenue are higher than those currently posted. A potential solution for consideration is the installation of dynamic speed feedback signs placed below the posted speed limit sign for northbound and southbound traffic on 12th Avenue (see right). Dynamic speed feedback signs are an effective and affordable tool to slow drivers down. The dynamic speed feedback signs display the speed of approaching vehicles, making speeding drivers aware that they are exceeding the speed limit. Studies have shown that speed feedback signs produce 10-20% reductions in average roadway speeds and increase compliance with the posted speed limit.



### Existing Traffic Operations

New 24-hour volume counts and peak hour intersection turning movement counts were collected for the study intersection. Further, JLB staff observed the traffic operations of the intersection during the one-hour AM peak which was found to take place between 7:30 AM and 8:30 AM. During JLB's observation, no pedestrians or bicyclists were observed during the AM peak hour. During the AM peak hour, JLB staff observed a maximum of 11 and 6 vehicles queued on the westbound and eastbound approaches of Flint Avenue, respectively.

On the northbound and southbound approaches, vehicles were observed to pass on the right through the intersection while traffic ahead of them slowed to make a left turn onto Flint Avenue. On the westbound approach, two vehicles were observed to enter the intersection with an inadequate "safe gap" in traffic, forcing 12th Avenue traffic to significantly slow down to avoid a collision.

The highest delay observed on the Flint Avenue approaches was 1 minute and 42 seconds. Approximately four school buses were observed to cross 12th Avenue while traveling on Flint Avenue during the AM peak hour. An operational analysis was also conducted for the intersection of 12th Avenue at Flint Avenue to



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determine the average delay for the worst minor street approach. These analyses were prepared with Synchro software utilizing the methodologies of the 2010 Highway Capacity Manual. Based on the analyses, the worst minor street approach is currently operating at LOS D with an average delay of 26.4 seconds during the AM peak and LOS C with an average delay of 16.5 seconds during the PM peak. The LOS worksheets are contained in Appendix C.

### Multi-Way STOP Warrant Analysis and Guidelines

Section 2B.07 Multi-Way STOP Applications of the CA MUTCD provides standards and guidelines to determine if an intersection should be considered for Multi-Way STOP controls. *“The decision to install Multi-Way STOP control should be based on an engineering study.”* This section also provides criteria that should be considered in the engineering study for Multi-Way STOP sign installation and are listed below.

- A. *Where traffic control signals are justified, the Multi-Way STOP is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
- B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a Multi-Way STOP installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
- C. *Minimum volumes:*
  1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
  2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
  3. *If the 85<sup>th</sup> percentile approach speed of the major-street traffic exceeds 40 MPH, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
- D. *Where no single Criteria is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criteria C.3 is excluded from this condition.*

### Multi-Way STOP Warrant – Criteria A and B

To complete Criteria A and B of the Multi-Way STOP Warrant, JLB completed CA MUTCD Signal Warrants 1, 3, and 7. The findings and results for Criteria C and D will be presented after Criteria A and B.

Section 4C.01 Studies and Factors for Justifying Traffic Control Signals of the 2014 CA MUTCD provide standards and guidelines to determine if an intersection should be considered for signalization. These guidelines are used to complete Criteria A and B of the Multi-Way STOP Warrant. The first of three steps in the process to determine if a signal is warranted is that an *“engineering study of traffic conditions,*



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*pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.”*

The intersection of 12th Avenue at Flint Avenue is a four-legged intersection at a relatively flat grade. 12th Avenue runs north-south, while Flint Avenue intersects 12th Avenue at approximately 90 degrees. Flint Avenue is the minor street and is controlled by two-way STOP signs. 12th Avenue is the major street and is uncontrolled.

Secondly, the investigation to determine if a traffic signal should be implemented shall include the applicable factors contained in various traffic Signal Warrants. The CA MUTCD contains the following warrants:

1. Warrant 1: Eight-Hour Vehicular Volume
2. Warrant 2: Four-Hour Vehicular Volume
3. Warrant 3: Peak Hour
4. Warrant 4: Pedestrian Volume
5. Warrant 5: School Crossing
6. Warrant 6: Coordinated Signal System
7. Warrant 7: Crash Experience
8. Warrant 8: Roadway Network
9. Warrant 9: Intersection Near a Grade Crossing

Of the nine warrants, the most appropriate for the subject intersection are Warrants 1, 3, and 7. Therefore, for purposes of this study, Warrants 1, 3, and 7 were completed. To complete Warrants 1 and 3, the new 24-hour volume counts and the intersection turning movement count were utilized.

### ***Warrant 1***

The standard to satisfy Warrant 1 of the 2014 CA MUTCD is as follows:

*The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:*

- A. *The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or*
- B. *The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.*

*In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.*

JLB completed Warrant 1 pursuant to the above guidelines. A copy of the completed Warrant 1 is contained in Appendix D. Based on the above guidelines and the existing traffic volumes, the intersection



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of 12th Avenue at Flint Avenue does not satisfy Conditions A or B of Warrant 1. Furthermore, Condition C of Warrant 1 is also not satisfied. Thus, Warrant 1 is not satisfied.

### ***Warrant 3***

The standard to satisfy Warrant 3 of the 2014 CA MUTCD is as follows:

*The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:*

- A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:*
  - 1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and*
  - 2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and*
  - 3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.*
- B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.*

Based on the new intersection turning movement counts, the intersection served a maximum of 744 hourly trips (peak hour), 164 of which were trips from the highest minor approach (westbound Flint Avenue). The highest average delay was found to take place during the AM peak with a total of 26.4 seconds of average delay per vehicle to the westbound minor street approach. Therefore, the total stopped time delay on the westbound Flint Avenue approach is  $(26.4 \text{ seconds} \times 164 \text{ vehicles}) / (3600 \text{ seconds/hour}) = 1.20 \text{ vehicle hours}$ . Therefore, Conditions A1, A2, and A3 are all unsatisfied, and thus Condition A of Warrant 3 is not satisfied.

JLB also completed Condition B of Warrant 3 based on the new intersection turning movement count. Based on the new counts, the plotted points fall under the applicable curve, and thus the intersection does not satisfy Condition B of Warrant 3.

JLB completed Warrant 3 pursuant to the 2014 CA MUTCD guidelines. A copy of the completed Warrant 3 is contained in Appendix D. Based on the above guidelines and the existing traffic volumes, the intersection of 12th Avenue at Flint Avenue does not satisfy Conditions A or B of Warrant 3. Therefore, signalization of the intersection is not justified under Warrant 3.



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### Warrant 7

The standard to satisfy Warrant 7 of the 2014 CA MUTCD states that the need for a traffic control signal based on crash experience shall be considered if an engineering study finds that *all* the following criteria are satisfied:

- A. *Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and*
- B. *Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and*
- C. *For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (Warrant 1), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours."*

To complete Condition B of Warrant 7, JLB reviewed collision reports for the most recent three-year period (August 26, 2013 - August 25, 2016) provided by Kings County. JLB also conducted a search of the Statewide Integrated Traffic Records System (SWITRS) to ensure that the collision reports provided by the County were the only reported collisions at the project intersection for the analysis period. The SWITRS *"is a database that serves as a means to collect and process data gathered from a collision scene. The Internet SWITRS application is a tool by which California Highway Patrol (CHP) staff and members of its Allied Agencies throughout California can request various types of statistical reports in an electronic format."* A review of the SWITRS database confirmed that the collision report data provided by the County were all inclusive of the three-year analysis period. In this three-year period, a total of ten collisions were reported within the influence zone of the intersection. Figure 1 illustrates a diagram of the collisions that took place between August 26, 2013 and August 25, 2016.

During this period, the maximum number of collisions susceptible to correction by the installation of a traffic signal in a twelve-month period is five. Based on the number of collisions susceptible to correction, Condition B of Warrant 7 is satisfied.

To complete Condition C of Warrant 7, the data from Warrant 1 was utilized. As stated in the Warrant 1 analyses, both Conditions A and B, as well as Condition C of Warrant 1 are not satisfied. As stated above, for Warrant 7 to be met, Conditions A, B, and C must be satisfied. As two of the conditions for Warrant 7 are not satisfied, Warrant 7 is not satisfied.

### Multi-Way STOP Warrant – Criteria A

To complete Criteria A (Signal Warrants) of the Multi-Way STOP Warrant, JLB utilized the data from Warrants 1, 3, and 7 previously presented within this letter. Criteria A is satisfied when the installation of



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the Multi-Way STOP is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of a traffic control signal. Since the intersection of 12th Avenue at Flint Avenue does not meet Signal Warrants 1, 3, or 7, Criteria A of the Multi-Way STOP Warrant is not satisfied.

### Multi-Way STOP Warrant – Criteria B

To complete Criteria B (Collisions) of the Multi-Way STOP Warrant, JLB utilized the data from the collision analysis previously presented within this letter. Criteria B is satisfied when five or more reported collisions in a 12-month period are susceptible to correction by the installation of a Multi-Way STOP. Since the number of collisions in a 12-month period that are susceptible to correction by the installation of a Multi-Way STOP control totals five, Criteria B of the Multi-Way STOP Warrant is satisfied. Therefore, it is recommended that the County consider implementing Multi-Way STOP controls at the intersection to promote safety. If the County implements a Multi-Way STOP control, it is possible the traffic volumes on Flint Avenue at 12th Avenue could increase as motorists would feel safer to cross 12th Avenue. As a result, the anticipated increase in traffic volumes resulting from the Multi-Way STOP control could satisfy volume-based Signal Warrants in the next few years. Thus, it is also recommended that the County monitor the intersection of 12th Avenue at Flint Avenue every other year for Signal Warrants 1 and 3.

### Multi-Way STOP Warrant – Criteria C

To complete Criteria C (Minimum Volumes) of the Multi-Way STOP Warrant, JLB compared the highest 8-hour volumes from the 24-hour volume counts for all legs of the intersection. Also, since the critical speed for the major street is greater than 40 MPH, 70 percent of the volume thresholds were used. Therefore, for Criteria C to be met, a minimum of 210 trips on the major street (total of both approaches) and 140 trips on the highest minor street approach are required for the same eight hours. Based on these volume thresholds, the volume for both approaches on the major street meets this threshold for the highest eight hours. However, the highest minor street approach does not meet the required threshold during three of the highest eight hours. The observed highest eight-hour volumes do not meet the minimum volumes. Therefore, Criteria C of the Multi-Way STOP Warrant is not satisfied.

### Multi-Way STOP Warrant – Criteria D

Criteria D is utilized where no single Criteria is satisfied, but where Criteria B, C.1, and C.2 of the Multi-Way STOP Warrant are all satisfied to 80 percent of the minimum values. In this case, Criteria B was satisfied. Therefore, Criteria D of the Multi-Way STOP Warrant would not apply.

Attachment: 12th-Flint (1795 : 12th-Flint stop)



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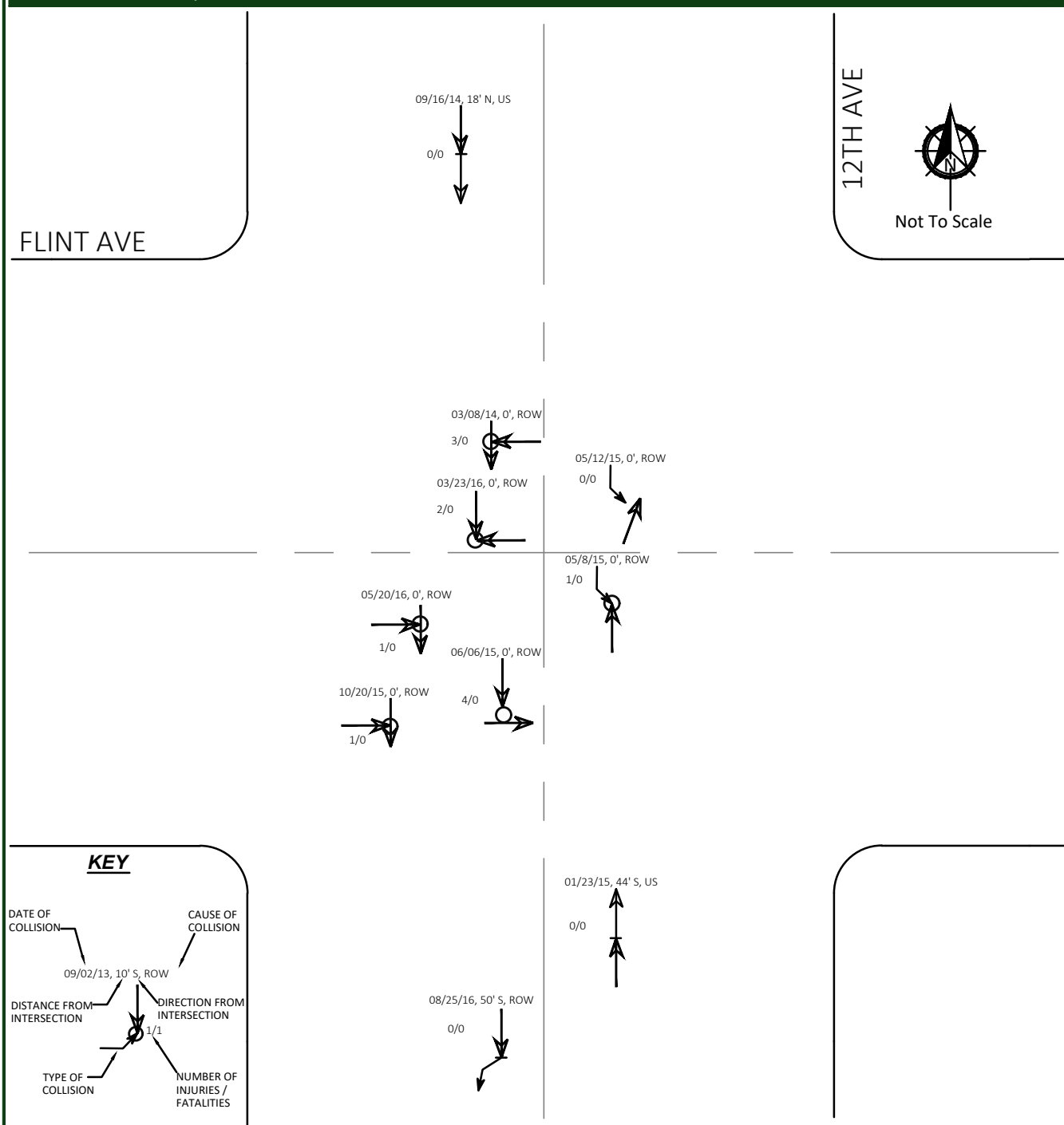
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# Kings County Intersection Safety Audit

## 10 Collisions

### November 21, 2016

Figure 1



Attachment: 12th-Flint (1795 : 12th-Flint stop)



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### COLLISION DIAGRAM

INTERSECTION: FLINT AVE AT 12TH AVE  
 PERIOD FROM: AUGUST 26, 2013 TO AUGUST 25, 2016

Mr. Dominic Tyburski  
12th Avenue at Flint Avenue – Intersection Traffic Safety Audit  
December 29, 2016

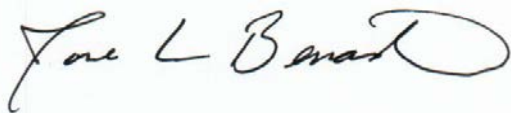
### Summary and Recommendations

JLB has completed the Traffic Safety Audit for the intersection of 12th Avenue at Flint Avenue. Based on these analyses, JLB's recommendations are provided below.

- It is recommended that consideration be given to the installation of dynamic speed feedback signs for 12th Avenue north and south of Flint Avenue.
- It is recommended that the County work with the CHP to provide periodic speed enforcement of 12th Avenue between Elder Avenue and Fargo Avenue.
- Based on the warrant analyses, the intersection of 12th Avenue at Flint Avenue does not satisfy Signal Warrants, but does satisfy Multi-Way STOP Warrants. Therefore, it is recommended that the County consider implementing Multi-Way STOP controls at the intersection to promote safety.
- After implementation of Multi-Way STOP controls, it is recommended that the County monitor the intersection every other year for Signal Warrants 1 and 3.

Please contact me by phone at (559) 570-8991, or email at [jbenavides@jlbtraffic.com](mailto:jbenavides@jlbtraffic.com) if you have questions regarding this Traffic Safety Audit.

Sincerely,



Jose Luis Benavides, P.E., T.E.  
President

Attachment: 12th-Flint (1795 : 12th-Flint stop)

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## Appendix A: Traffic Counts

Attachment: 12th-Flint (1795 : 12th-Flint stop)



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Prepared by NDS/ATD

**VOLUME**

Flint Ave 800' W/O 12th Ave

Day: Tuesday  
Date: 11/15/2016County: Kings  
Project #: CA16\_8149\_001

| DAILY TOTALS |       |    |    |    | NB    | SB    | EB        |       |    |    |    | WB    |      |    |     |  | Total |
|--------------|-------|----|----|----|-------|-------|-----------|-------|----|----|----|-------|------|----|-----|--|-------|
|              |       |    |    |    | 0     | 0     |           |       |    |    |    |       |      |    |     |  | 600   |
| AM Period    | NB    | SB | EB | WB | TOTAL |       | PM Period | NB    | SB | EB | WB | TOTAL |      |    |     |  |       |
| 00:00        |       |    | 0  | 1  | 1     |       | 12:00     |       |    | 8  | 6  | 14    |      |    |     |  |       |
| 00:15        |       |    | 0  | 0  | 0     |       | 12:15     |       |    | 5  | 7  | 12    |      |    |     |  |       |
| 00:30        |       |    | 0  | 1  | 1     |       | 12:30     |       |    | 4  | 3  | 7     |      |    |     |  |       |
| 00:45        |       |    | 1  | 1  | 0     | 2     | 12:45     |       |    | 4  | 21 | 12    | 28   | 16 | 49  |  |       |
| 01:00        |       |    | 0  | 0  | 0     |       | 13:00     |       |    | 7  | 10 | 17    |      |    |     |  |       |
| 01:15        |       |    | 1  | 0  | 1     |       | 13:15     |       |    | 7  | 7  | 14    |      |    |     |  |       |
| 01:30        |       |    | 0  | 1  | 1     |       | 13:30     |       |    | 3  | 11 | 14    |      |    |     |  |       |
| 01:45        |       |    | 0  | 1  | 1     | 2     | 13:45     |       |    | 7  | 24 | 7     | 35   | 14 | 59  |  |       |
| 02:00        |       |    | 0  | 0  | 0     |       | 14:00     |       |    | 3  | 16 | 19    |      |    |     |  |       |
| 02:15        |       |    | 0  | 0  | 0     |       | 14:15     |       |    | 15 | 12 | 27    |      |    |     |  |       |
| 02:30        |       |    | 0  | 0  | 0     |       | 14:30     |       |    | 17 | 14 | 31    |      |    |     |  |       |
| 02:45        |       |    | 1  | 1  | 0     | 1     | 14:45     |       |    | 11 | 46 | 14    | 56   | 25 | 102 |  |       |
| 03:00        |       |    | 0  | 1  | 1     |       | 15:00     |       |    | 25 | 13 | 38    |      |    |     |  |       |
| 03:15        |       |    | 0  | 0  | 0     |       | 15:15     |       |    | 22 | 21 | 43    |      |    |     |  |       |
| 03:30        |       |    | 0  | 0  | 0     |       | 15:30     |       |    | 15 | 24 | 39    |      |    |     |  |       |
| 03:45        |       |    | 1  | 1  | 0     | 1     | 15:45     |       |    | 18 | 80 | 12    | 70   | 30 | 150 |  |       |
| 04:00        |       |    | 1  | 0  | 1     |       | 16:00     |       |    | 18 | 13 | 31    |      |    |     |  |       |
| 04:15        |       |    | 0  | 0  | 0     |       | 16:15     |       |    | 15 | 9  | 24    |      |    |     |  |       |
| 04:30        |       |    | 0  | 3  | 3     |       | 16:30     |       |    | 14 | 12 | 26    |      |    |     |  |       |
| 04:45        |       |    | 0  | 1  | 2     | 5     | 16:45     |       |    | 16 | 63 | 8     | 42   | 24 | 105 |  |       |
| 05:00        |       |    | 1  | 4  | 5     |       | 17:00     |       |    | 11 | 17 | 28    |      |    |     |  |       |
| 05:15        |       |    | 1  | 3  | 4     |       | 17:15     |       |    | 17 | 7  | 24    |      |    |     |  |       |
| 05:30        |       |    | 2  | 5  | 7     |       | 17:30     |       |    | 13 | 16 | 29    |      |    |     |  |       |
| 05:45        |       |    | 9  | 13 | 6     | 18    | 17:45     |       |    | 8  | 49 | 8     | 48   | 16 | 97  |  |       |
| 06:00        |       |    | 6  | 4  | 10    |       | 18:00     |       |    | 9  | 5  | 14    |      |    |     |  |       |
| 06:15        |       |    | 5  | 7  | 12    |       | 18:15     |       |    | 10 | 8  | 18    |      |    |     |  |       |
| 06:30        |       |    | 1  | 16 | 17    |       | 18:30     |       |    | 11 | 10 | 21    |      |    |     |  |       |
| 06:45        |       |    | 13 | 25 | 15    | 42    | 18:45     |       |    | 9  | 39 | 7     | 30   | 16 | 69  |  |       |
| 07:00        |       |    | 4  | 10 | 14    |       | 19:00     |       |    | 5  | 3  | 8     |      |    |     |  |       |
| 07:15        |       |    | 6  | 9  | 15    |       | 19:15     |       |    | 3  | 4  | 7     |      |    |     |  |       |
| 07:30        |       |    | 16 | 28 | 44    |       | 19:30     |       |    | 4  | 3  | 7     |      |    |     |  |       |
| 07:45        |       |    | 23 | 49 | 23    | 70    | 19:45     |       |    | 3  | 15 | 3     | 13   | 6  | 28  |  |       |
| 08:00        |       |    | 16 | 36 | 52    |       | 20:00     |       |    | 4  | 3  | 7     |      |    |     |  |       |
| 08:15        |       |    | 17 | 12 | 29    |       | 20:15     |       |    | 1  | 6  | 7     |      |    |     |  |       |
| 08:30        |       |    | 10 | 6  | 16    |       | 20:30     |       |    | 4  | 1  | 5     |      |    |     |  |       |
| 08:45        |       |    | 7  | 50 | 7     | 61    | 20:45     |       |    | 3  | 12 | 1     | 11   | 4  | 23  |  |       |
| 09:00        |       |    | 8  | 9  | 17    |       | 21:00     |       |    | 2  | 2  | 4     |      |    |     |  |       |
| 09:15        |       |    | 11 | 5  | 16    |       | 21:15     |       |    | 4  | 4  | 8     |      |    |     |  |       |
| 09:30        |       |    | 1  | 9  | 10    |       | 21:30     |       |    | 2  | 1  | 3     |      |    |     |  |       |
| 09:45        |       |    | 6  | 26 | 11    | 34    | 21:45     |       |    | 7  | 15 | 1     | 8    | 8  | 23  |  |       |
| 10:00        |       |    | 5  | 8  | 13    |       | 22:00     |       |    | 2  | 0  | 2     |      |    |     |  |       |
| 10:15        |       |    | 6  | 6  | 12    |       | 22:15     |       |    | 1  | 1  | 2     |      |    |     |  |       |
| 10:30        |       |    | 2  | 6  | 8     |       | 22:30     |       |    | 1  | 2  | 3     |      |    |     |  |       |
| 10:45        |       |    | 10 | 23 | 11    | 31    | 22:45     |       |    | 2  | 6  | 1     | 4    | 3  | 10  |  |       |
| 11:00        |       |    | 9  | 10 | 19    |       | 23:00     |       |    | 0  | 1  | 1     |      |    |     |  |       |
| 11:15        |       |    | 9  | 5  | 14    |       | 23:15     |       |    | 2  | 0  | 2     |      |    |     |  |       |
| 11:30        |       |    | 8  | 1  | 9     |       | 23:30     |       |    | 1  | 0  | 1     |      |    |     |  |       |
| 11:45        |       |    | 10 | 36 | 10    | 26    | 23:45     |       |    | 0  | 3  | 1     | 2    | 1  | 5   |  |       |
| TOTALS       | 227   |    |    |    | 292   | 519   | TOTALS    | 373   |    |    |    | 347   | 720  |    |     |  |       |
| SPLIT %      | 43.7% |    |    |    | 56.3% | 41.9% | SPLIT %   | 51.8% |    |    |    | 48.2% | 58.1 |    |     |  |       |

Attachment: 12th-Flint (1795 : 12th-Flint stop)

| DAILY TOTALS    |       |       |       |       | NB    | SB |                 |       |       |       |       | EB    | WB  |  |  |  |  |  | Total |
|-----------------|-------|-------|-------|-------|-------|----|-----------------|-------|-------|-------|-------|-------|-----|--|--|--|--|--|-------|
|                 |       |       |       |       | 0     | 0  |                 |       |       |       |       | 600   | 639 |  |  |  |  |  | 1,239 |
| AM Peak Hour    |       |       | 07:30 | 07:30 | 07:30 |    | PM Peak Hour    |       |       | 15:00 | 14:45 | 15:00 |     |  |  |  |  |  |       |
| AM Pk Volume    |       |       | 72    | 99    | 171   |    | PM Pk Volume    |       |       | 80    | 72    | 150   |     |  |  |  |  |  |       |
| Pk Hr Factor    |       |       | 0.783 | 0.688 | 0.822 |    | Pk Hr Factor    |       |       | 0.800 | 0.750 | 0.87  |     |  |  |  |  |  |       |
| 7 - 9 Volume    | 0     | 0     | 99    | 131   | 230   |    | 4 - 6 Volume    | 0     | 0     | 112   | 90    | 202   |     |  |  |  |  |  |       |
| 7 - 9 Peak Hour |       |       | 07:30 | 07:30 | 07:30 |    | 4 - 6 Peak Hour |       |       | 16:00 | 16:45 | 16:00 |     |  |  |  |  |  |       |
| 7 - 9 Pk Volume | 0     | 0     | 72    | 99    | 171   |    | 4 - 6 Pk Volume | 0     | 0     | 63    | 48    | 105   |     |  |  |  |  |  |       |
| Pk Hr Factor    | 0.000 | 0.000 | 0.783 | 0.688 | 0.822 |    | Pk Hr Factor    | 0.000 | 0.000 | 0.875 | 0.706 | 0.84  |     |  |  |  |  |  |       |

Prepared by NDS/ATD

**VOLUME**

Flint Ave 800' E/O 12th Ave

Day: Tuesday  
Date: 11/15/2016

County: Kings  
Project #: CA16\_8149\_002

| DAILY TOTALS |    |    |       |       | NB    | SB  | EB        |    |    |       |       | WB    |     |    |     |  | Total |  |
|--------------|----|----|-------|-------|-------|-----|-----------|----|----|-------|-------|-------|-----|----|-----|--|-------|--|
|              |    |    |       |       | 0     | 0   |           |    |    |       |       |       |     |    |     |  | 1,164 |  |
| AM Period    | NB | SB | EB    | WB    | TOTAL |     | PM Period | NB | SB | EB    | WB    | TOTAL |     |    |     |  |       |  |
| 00:00        |    |    | 0     | 2     | 2     |     | 12:00     |    |    | 14    | 13    | 27    |     |    |     |  |       |  |
| 00:15        |    |    | 0     | 1     | 1     |     | 12:15     |    |    | 14    | 12    | 26    |     |    |     |  |       |  |
| 00:30        |    |    | 0     | 0     | 0     |     | 12:30     |    |    | 14    | 15    | 29    |     |    |     |  |       |  |
| 00:45        |    |    | 1     | 1     | 1     | 4   | 12:45     |    |    | 11    | 53    | 19    | 59  | 30 | 112 |  |       |  |
| 01:00        |    |    | 1     | 0     | 1     |     | 13:00     |    |    | 18    | 14    | 32    |     |    |     |  |       |  |
| 01:15        |    |    | 1     | 0     | 1     |     | 13:15     |    |    | 11    | 16    | 27    |     |    |     |  |       |  |
| 01:30        |    |    | 0     | 1     | 1     |     | 13:30     |    |    | 11    | 22    | 33    |     |    |     |  |       |  |
| 01:45        |    |    | 0     | 2     | 0     | 1   | 13:45     |    |    | 16    | 56    | 18    | 70  | 34 | 126 |  |       |  |
| 02:00        |    |    | 0     | 0     | 0     |     | 14:00     |    |    | 12    | 25    | 37    |     |    |     |  |       |  |
| 02:15        |    |    | 2     | 2     | 4     |     | 14:15     |    |    | 19    | 17    | 36    |     |    |     |  |       |  |
| 02:30        |    |    | 1     | 0     | 1     |     | 14:30     |    |    | 28    | 19    | 47    |     |    |     |  |       |  |
| 02:45        |    |    | 0     | 3     | 1     | 3   | 14:45     |    |    | 19    | 78    | 33    | 94  | 52 | 172 |  |       |  |
| 03:00        |    |    | 0     | 0     | 0     |     | 15:00     |    |    | 61    | 21    | 82    |     |    |     |  |       |  |
| 03:15        |    |    | 0     | 0     | 0     |     | 15:15     |    |    | 39    | 39    | 78    |     |    |     |  |       |  |
| 03:30        |    |    | 0     | 0     | 0     |     | 15:30     |    |    | 23    | 39    | 62    |     |    |     |  |       |  |
| 03:45        |    |    | 1     | 1     | 2     | 2   | 15:45     |    |    | 25    | 148   | 23    | 122 | 48 | 270 |  |       |  |
| 04:00        |    |    | 2     | 0     | 2     |     | 16:00     |    |    | 28    | 27    | 55    |     |    |     |  |       |  |
| 04:15        |    |    | 0     | 1     | 1     |     | 16:15     |    |    | 27    | 22    | 49    |     |    |     |  |       |  |
| 04:30        |    |    | 1     | 6     | 7     |     | 16:30     |    |    | 29    | 16    | 45    |     |    |     |  |       |  |
| 04:45        |    |    | 1     | 4     | 4     | 11  | 16:45     |    |    | 27    | 111   | 18    | 83  | 45 | 194 |  |       |  |
| 05:00        |    |    | 1     | 5     | 6     |     | 17:00     |    |    | 24    | 19    | 43    |     |    |     |  |       |  |
| 05:15        |    |    | 2     | 5     | 7     |     | 17:15     |    |    | 37    | 18    | 55    |     |    |     |  |       |  |
| 05:30        |    |    | 5     | 10    | 15    |     | 17:30     |    |    | 22    | 26    | 48    |     |    |     |  |       |  |
| 05:45        |    |    | 14    | 22    | 9     | 29  | 17:45     |    |    | 25    | 108   | 16    | 79  | 41 | 187 |  |       |  |
| 06:00        |    |    | 13    | 9     | 22    |     | 18:00     |    |    | 22    | 6     | 28    |     |    |     |  |       |  |
| 06:15        |    |    | 9     | 15    | 24    |     | 18:15     |    |    | 18    | 10    | 28    |     |    |     |  |       |  |
| 06:30        |    |    | 9     | 26    | 35    |     | 18:30     |    |    | 18    | 18    | 36    |     |    |     |  |       |  |
| 06:45        |    |    | 12    | 43    | 16    | 66  | 18:45     |    |    | 17    | 75    | 14    | 48  | 31 | 123 |  |       |  |
| 07:00        |    |    | 14    | 26    | 40    |     | 19:00     |    |    | 10    | 12    | 22    |     |    |     |  |       |  |
| 07:15        |    |    | 16    | 35    | 51    |     | 19:15     |    |    | 8     | 7     | 15    |     |    |     |  |       |  |
| 07:30        |    |    | 23    | 32    | 55    |     | 19:30     |    |    | 9     | 6     | 15    |     |    |     |  |       |  |
| 07:45        |    |    | 40    | 93    | 40    | 133 | 19:45     |    |    | 10    | 37    | 8     | 33  | 18 | 70  |  |       |  |
| 08:00        |    |    | 43    | 62    | 105   |     | 20:00     |    |    | 7     | 9     | 16    |     |    |     |  |       |  |
| 08:15        |    |    | 40    | 30    | 70    |     | 20:15     |    |    | 5     | 6     | 11    |     |    |     |  |       |  |
| 08:30        |    |    | 13    | 15    | 28    |     | 20:30     |    |    | 6     | 2     | 8     |     |    |     |  |       |  |
| 08:45        |    |    | 12    | 108   | 23    | 130 | 20:45     |    |    | 8     | 26    | 3     | 20  | 11 | 46  |  |       |  |
| 09:00        |    |    | 8     | 14    | 22    |     | 21:00     |    |    | 2     | 4     | 6     |     |    |     |  |       |  |
| 09:15        |    |    | 17    | 15    | 32    |     | 21:15     |    |    | 5     | 6     | 11    |     |    |     |  |       |  |
| 09:30        |    |    | 8     | 9     | 17    |     | 21:30     |    |    | 3     | 2     | 5     |     |    |     |  |       |  |
| 09:45        |    |    | 12    | 45    | 16    | 54  | 21:45     |    |    | 8     | 18    | 2     | 14  | 10 | 32  |  |       |  |
| 10:00        |    |    | 13    | 16    | 29    |     | 22:00     |    |    | 2     | 3     | 5     |     |    |     |  |       |  |
| 10:15        |    |    | 15    | 11    | 26    |     | 22:15     |    |    | 1     | 4     | 5     |     |    |     |  |       |  |
| 10:30        |    |    | 14    | 16    | 30    |     | 22:30     |    |    | 3     | 1     | 4     |     |    |     |  |       |  |
| 10:45        |    |    | 12    | 54    | 22    | 65  | 22:45     |    |    | 2     | 8     | 1     | 9   | 3  | 17  |  |       |  |
| 11:00        |    |    | 14    | 18    | 32    |     | 23:00     |    |    | 0     | 2     | 2     |     |    |     |  |       |  |
| 11:15        |    |    | 23    | 10    | 33    |     | 23:15     |    |    | 1     | 1     | 2     |     |    |     |  |       |  |
| 11:30        |    |    | 16    | 15    | 31    |     | 23:30     |    |    | 1     | 1     | 2     |     |    |     |  |       |  |
| 11:45        |    |    | 15    | 68    | 21    | 64  | 23:45     |    |    | 0     | 2     | 2     | 6   | 2  | 8   |  |       |  |
| TOTALS       |    |    | 444   | 562   | 1006  |     | TOTALS    |    |    | 720   | 637   | 1357  |     |    |     |  |       |  |
| SPLIT %      |    |    | 44.1% | 55.9% | 42.6% |     | SPLIT %   |    |    | 53.1% | 46.9% | 57.4  |     |    |     |  |       |  |

Attachment: 12th-Flint (1795 : 12th-Flint stop)

| DAILY TOTALS    |       |       |       |       | NB    | SB |                 |       |       |       |       | EB    | WB    |  |  |  |  |  | Total |
|-----------------|-------|-------|-------|-------|-------|----|-----------------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|-------|
|                 |       |       |       |       | 0     | 0  |                 |       |       |       |       | 1,164 | 1,199 |  |  |  |  |  | 2,363 |
| AM Peak Hour    |       |       | 07:30 | 07:15 | 07:30 |    | PM Peak Hour    |       |       | 15:00 | 14:45 | 14:4  |       |  |  |  |  |  |       |
| AM Pk Volume    |       |       | 146   | 169   | 310   |    | PM Pk Volume    |       |       | 148   | 132   | 274   |       |  |  |  |  |  |       |
| Pk Hr Factor    |       |       | 0.849 | 0.681 | 0.738 |    | Pk Hr Factor    |       |       | 0.607 | 0.846 | 0.83  |       |  |  |  |  |  |       |
| 7 - 9 Volume    | 0     | 0     | 201   | 263   | 464   |    | 4 - 6 Volume    | 0     | 0     | 219   | 162   | 381   |       |  |  |  |  |  |       |
| 7 - 9 Peak Hour |       |       | 07:30 | 07:15 | 07:30 |    | 4 - 6 Peak Hour |       |       | 16:30 | 16:00 | 16:0  |       |  |  |  |  |  |       |
| 7 - 9 Pk Volume | 0     | 0     | 146   | 169   | 310   |    | 4 - 6 Pk Volume | 0     | 0     | 117   | 83    | 194   |       |  |  |  |  |  |       |
| Pk Hr Factor    | 0.000 | 0.000 | 0.849 | 0.681 | 0.738 |    | Pk Hr Factor    | 0.000 | 0.000 | 0.791 | 0.769 | 0.88  |       |  |  |  |  |  |       |

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**VOLUME**

12th Ave 800' S/O Flint Ave

Day: Tuesday  
Date: 11/15/2016County: Kings  
Project #: CA16\_8149\_003

| DAILY TOTALS |       |       |    |     | NB    | SB        | EB    |       | WB |     | Total |
|--------------|-------|-------|----|-----|-------|-----------|-------|-------|----|-----|-------|
|              |       |       |    |     | 2,469 | 2,608     |       |       |    |     | 0     |
| AM Period    | NB    | SB    | EB | WB  | TOTAL | PM Period | NB    | SB    | EB | WB  | TOTAL |
| 00:00        | 1     | 4     |    |     | 5     | 12:00     | 35    | 33    |    |     | 68    |
| 00:15        | 2     | 3     |    |     | 5     | 12:15     | 36    | 34    |    |     | 70    |
| 00:30        | 5     | 0     |    |     | 5     | 12:30     | 25    | 45    |    |     | 70    |
| 00:45        | 2     | 10    | 3  | 10  | 5     | 12:45     | 40    | 136   | 38 | 150 | 78    |
| 01:00        | 3     | 2     |    |     | 5     | 13:00     | 45    | 38    |    |     | 83    |
| 01:15        | 2     | 2     |    |     | 4     | 13:15     | 38    | 37    |    |     | 75    |
| 01:30        | 1     | 0     |    |     | 1     | 13:30     | 33    | 40    |    |     | 73    |
| 01:45        | 5     | 11    | 1  | 5   | 6     | 13:45     | 27    | 143   | 40 | 155 | 67    |
| 02:00        | 0     | 2     |    |     | 2     | 14:00     | 41    | 26    |    |     | 67    |
| 02:15        | 1     | 2     |    |     | 3     | 14:15     | 42    | 36    |    |     | 78    |
| 02:30        | 2     | 2     |    |     | 4     | 14:30     | 60    | 50    |    |     | 110   |
| 02:45        | 0     | 3     | 4  | 10  | 4     | 14:45     | 63    | 206   | 43 | 155 | 106   |
| 03:00        | 0     | 3     |    |     | 3     | 15:00     | 78    | 49    |    |     | 127   |
| 03:15        | 3     | 0     |    |     | 3     | 15:15     | 53    | 53    |    |     | 106   |
| 03:30        | 3     | 2     |    |     | 5     | 15:30     | 48    | 60    |    |     | 108   |
| 03:45        | 2     | 8     | 6  | 11  | 8     | 15:45     | 52    | 231   | 56 | 218 | 108   |
| 04:00        | 5     | 4     |    |     | 9     | 16:00     | 47    | 60    |    |     | 107   |
| 04:15        | 5     | 5     |    |     | 10    | 16:15     | 64    | 44    |    |     | 108   |
| 04:30        | 5     | 7     |    |     | 12    | 16:30     | 53    | 61    |    |     | 114   |
| 04:45        | 10    | 25    | 11 | 27  | 21    | 16:45     | 53    | 217   | 54 | 219 | 107   |
| 05:00        | 9     | 10    |    |     | 19    | 17:00     | 84    | 52    |    |     | 136   |
| 05:15        | 13    | 12    |    |     | 25    | 17:15     | 66    | 53    |    |     | 119   |
| 05:30        | 18    | 12    |    |     | 30    | 17:30     | 48    | 69    |    |     | 117   |
| 05:45        | 27    | 67    | 13 | 47  | 40    | 17:45     | 42    | 240   | 51 | 225 | 93    |
| 06:00        | 27    | 13    |    |     | 40    | 18:00     | 46    | 31    |    |     | 77    |
| 06:15        | 23    | 13    |    |     | 36    | 18:15     | 44    | 38    |    |     | 82    |
| 06:30        | 33    | 33    |    |     | 66    | 18:30     | 31    | 36    |    |     | 67    |
| 06:45        | 33    | 116   | 50 | 109 | 83    | 18:45     | 28    | 149   | 39 | 144 | 67    |
| 07:00        | 29    | 39    |    |     | 68    | 19:00     | 34    | 14    |    |     | 48    |
| 07:15        | 36    | 56    |    |     | 92    | 19:15     | 18    | 23    |    |     | 41    |
| 07:30        | 65    | 74    |    |     | 139   | 19:30     | 22    | 20    |    |     | 42    |
| 07:45        | 70    | 200   | 93 | 262 | 163   | 19:45     | 17    | 91    | 13 | 70  | 30    |
| 08:00        | 50    | 76    |    |     | 126   | 20:00     | 17    | 24    |    |     | 41    |
| 08:15        | 32    | 71    |    |     | 103   | 20:15     | 17    | 18    |    |     | 35    |
| 08:30        | 22    | 36    |    |     | 58    | 20:30     | 12    | 10    |    |     | 22    |
| 08:45        | 20    | 124   | 43 | 226 | 63    | 20:45     | 16    | 62    | 8  | 60  | 24    |
| 09:00        | 24    | 35    |    |     | 59    | 21:00     | 12    | 10    |    |     | 22    |
| 09:15        | 34    | 27    |    |     | 61    | 21:15     | 14    | 12    |    |     | 26    |
| 09:30        | 18    | 36    |    |     | 54    | 21:30     | 11    | 8     |    |     | 19    |
| 09:45        | 30    | 106   | 42 | 140 | 72    | 21:45     | 17    | 54    | 4  | 34  | 21    |
| 10:00        | 24    | 35    |    |     | 59    | 22:00     | 2     | 9     |    |     | 11    |
| 10:15        | 23    | 26    |    |     | 49    | 22:15     | 12    | 6     |    |     | 18    |
| 10:30        | 38    | 33    |    |     | 71    | 22:30     | 6     | 4     |    |     | 10    |
| 10:45        | 28    | 113   | 44 | 138 | 72    | 22:45     | 5     | 25    | 5  | 24  | 10    |
| 11:00        | 26    | 38    |    |     | 64    | 23:00     | 1     | 5     |    |     | 6     |
| 11:15        | 27    | 51    |    |     | 78    | 23:15     | 6     | 6     |    |     | 12    |
| 11:30        | 33    | 30    |    |     | 63    | 23:30     | 2     | 3     |    |     | 5     |
| 11:45        | 34    | 120   | 32 | 151 | 66    | 23:45     | 3     | 12    | 4  | 18  | 7     |
| TOTALS       | 903   | 1136  |    |     | 2039  | TOTALS    | 1566  | 1472  |    |     | 3038  |
| SPLIT %      | 44.3% | 55.7% |    |     | 40.2% | SPLIT %   | 51.5% | 48.5% |    |     | 59.8% |

Attachment: 12th-Flint (1795 : 12th-Flint stop)

| DAILY TOTALS    |       |       |       |       | NB              | SB    | EB    | WB    | Total |
|-----------------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|
|                 |       |       |       |       | 2,469           | 2,608 | 0     | 0     | 5,077 |
| AM Peak Hour    | 07:15 | 07:30 |       | 07:30 | PM Peak Hour    | 16:30 | 15:15 |       | 16:45 |
| AM Pk Volume    | 221   | 314   |       | 531   | PM Pk Volume    | 256   | 229   |       | 479   |
| Pk Hr Factor    | 0.789 | 0.844 |       | 0.814 | Pk Hr Factor    | 0.762 | 0.954 |       | 0.88  |
| 7 - 9 Volume    | 324   | 488   | 0     | 0     | 4 - 6 Volume    | 457   | 444   | 0     | 0     |
| 7 - 9 Peak Hour | 07:15 | 07:30 |       | 07:30 | 4 - 6 Peak Hour | 16:30 | 16:45 |       | 16:45 |
| 7 - 9 Pk Volume | 221   | 314   | 0     | 0     | 4 - 6 Pk Volume | 256   | 228   | 0     | 0     |
| Pk Hr Factor    | 0.789 | 0.844 | 0.000 | 0.000 | Pk Hr Factor    | 0.762 | 0.826 | 0.000 | 0.000 |

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**VOLUME**

12th Ave 800 ' N/O Flint Ave

Day: Tuesday  
Date: 11/15/2016County: Kings  
Project #: CA16\_8149\_004

| DAILY TOTALS |       |       |    |     | NB    | SB        |       |       |    |     | EB    | WB  | Total |
|--------------|-------|-------|----|-----|-------|-----------|-------|-------|----|-----|-------|-----|-------|
|              |       |       |    |     | 2,290 | 2,404     |       |       |    |     | 0     | 0   | 4,694 |
| AM Period    | NB    | SB    | EB | WB  | TOTAL | PM Period | NB    | SB    | EB | WB  | TOTAL |     |       |
| 00:00        | 1     | 4     |    |     | 5     | 12:00     | 36    | 27    |    |     | 63    |     |       |
| 00:15        | 2     | 1     |    |     | 3     | 12:15     | 28    | 35    |    |     | 63    |     |       |
| 00:30        | 4     | 0     |    |     | 4     | 12:30     | 24    | 39    |    |     | 63    |     |       |
| 00:45        | 1     | 8     | 2  | 7   | 3     | 12:45     | 30    | 118   | 34 | 135 | 64    | 253 |       |
| 01:00        | 3     | 2     |    |     | 5     | 13:00     | 39    | 36    |    |     | 75    |     |       |
| 01:15        | 2     | 2     |    |     | 4     | 13:15     | 40    | 30    |    |     | 70    |     |       |
| 01:30        | 1     | 0     |    |     | 1     | 13:30     | 30    | 39    |    |     | 69    |     |       |
| 01:45        | 4     | 10    | 1  | 5   | 5     | 13:45     | 25    | 134   | 38 | 143 | 63    | 277 |       |
| 02:00        | 0     | 2     |    |     | 2     | 14:00     | 39    | 22    |    |     | 61    |     |       |
| 02:15        | 1     | 2     |    |     | 3     | 14:15     | 36    | 28    |    |     | 64    |     |       |
| 02:30        | 1     | 2     |    |     | 3     | 14:30     | 54    | 46    |    |     | 100   |     |       |
| 02:45        | 0     | 2     | 3  | 9   | 3     | 14:45     | 55    | 184   | 42 | 138 | 97    | 322 |       |
| 03:00        | 0     | 3     |    |     | 3     | 15:00     | 60    | 39    |    |     | 99    |     |       |
| 03:15        | 3     | 0     |    |     | 3     | 15:15     | 49    | 42    |    |     | 91    |     |       |
| 03:30        | 3     | 2     |    |     | 5     | 15:30     | 56    | 52    |    |     | 108   |     |       |
| 03:45        | 4     | 10    | 6  | 11  | 10    | 15:45     | 45    | 210   | 53 | 186 | 98    | 396 |       |
| 04:00        | 4     | 5     |    |     | 9     | 16:00     | 52    | 49    |    |     | 101   |     |       |
| 04:15        | 5     | 6     |    |     | 11    | 16:15     | 56    | 52    |    |     | 108   |     |       |
| 04:30        | 5     | 7     |    |     | 12    | 16:30     | 52    | 59    |    |     | 111   |     |       |
| 04:45        | 10    | 24    | 10 | 28  | 20    | 16:45     | 57    | 217   | 53 | 213 | 110   | 430 |       |
| 05:00        | 10    | 8     |    |     | 18    | 17:00     | 78    | 52    |    |     | 130   |     |       |
| 05:15        | 13    | 10    |    |     | 23    | 17:15     | 60    | 67    |    |     | 127   |     |       |
| 05:30        | 17    | 12    |    |     | 29    | 17:30     | 38    | 72    |    |     | 110   |     |       |
| 05:45        | 28    | 68    | 14 | 44  | 42    | 17:45     | 44    | 220   | 48 | 239 | 92    | 459 |       |
| 06:00        | 28    | 15    |    |     | 43    | 18:00     | 37    | 31    |    |     | 68    |     |       |
| 06:15        | 21    | 12    |    |     | 33    | 18:15     | 37    | 38    |    |     | 75    |     |       |
| 06:30        | 38    | 35    |    |     | 73    | 18:30     | 27    | 34    |    |     | 61    |     |       |
| 06:45        | 29    | 116   | 46 | 108 | 75    | 18:45     | 25    | 126   | 32 | 135 | 57    | 261 |       |
| 07:00        | 40    | 40    |    |     | 80    | 19:00     | 30    | 7     |    |     | 37    |     |       |
| 07:15        | 39    | 51    |    |     | 90    | 19:15     | 21    | 25    |    |     | 46    |     |       |
| 07:30        | 69    | 69    |    |     | 138   | 19:30     | 23    | 18    |    |     | 41    |     |       |
| 07:45        | 49    | 197   | 94 | 254 | 143   | 19:45     | 17    | 91    | 15 | 65  | 32    | 156 |       |
| 08:00        | 34    | 60    |    |     | 94    | 20:00     | 19    | 22    |    |     | 41    |     |       |
| 08:15        | 18    | 51    |    |     | 69    | 20:15     | 15    | 17    |    |     | 32    |     |       |
| 08:30        | 32    | 33    |    |     | 65    | 20:30     | 10    | 9     |    |     | 19    |     |       |
| 08:45        | 23    | 107   | 38 | 182 | 61    | 20:45     | 14    | 58    | 8  | 56  | 22    | 114 |       |
| 09:00        | 21    | 27    |    |     | 48    | 21:00     | 12    | 9     |    |     | 21    |     |       |
| 09:15        | 41    | 25    |    |     | 66    | 21:15     | 13    | 9     |    |     | 22    |     |       |
| 09:30        | 14    | 39    |    |     | 53    | 21:30     | 12    | 8     |    |     | 20    |     |       |
| 09:45        | 20    | 96    | 39 | 130 | 59    | 21:45     | 14    | 51    | 2  | 28  | 16    | 79  |       |
| 10:00        | 24    | 34    |    |     | 58    | 22:00     | 4     | 9     |    |     | 13    |     |       |
| 10:15        | 21    | 25    |    |     | 46    | 22:15     | 12    | 3     |    |     | 15    |     |       |
| 10:30        | 31    | 29    |    |     | 60    | 22:30     | 4     | 3     |    |     | 7     |     |       |
| 10:45        | 27    | 103   | 34 | 122 | 61    | 22:45     | 5     | 25    | 4  | 19  | 9     | 44  |       |
| 11:00        | 20    | 34    |    |     | 54    | 23:00     | 1     | 4     |    |     | 5     |     |       |
| 11:15        | 23    | 49    |    |     | 72    | 23:15     | 6     | 4     |    |     | 10    |     |       |
| 11:30        | 30    | 23    |    |     | 53    | 23:30     | 3     | 3     |    |     | 6     |     |       |
| 11:45        | 29    | 102   | 27 | 133 | 56    | 23:45     | 3     | 13    | 3  | 14  | 6     | 27  |       |
| TOTALS       | 843   | 1033  |    |     | 1876  | TOTALS    | 1447  | 1371  |    |     | 2818  |     |       |
| SPLIT %      | 44.9% | 55.1% |    |     | 40.0% | SPLIT %   | 51.3% | 48.7% |    |     | 60.0% |     |       |

Attachment: 12th-Flint (1795 : 12th-Flint stop)

| DAILY TOTALS    |       |       |       | NB    | SB    |                 |       |       |       | EB    | WB | Total |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|----|-------|-------|
|                 |       |       |       | 2,290 | 2,404 |                 |       |       |       | 0     | 0  |       |       |
| AM Peak Hour    | 07:00 | 07:15 |       |       | 07:15 | PM Peak Hour    | 16:30 | 16:45 |       |       |    |       | 16:45 |
| AM Pk Volume    | 197   | 274   |       |       | 465   | PM Pk Volume    | 247   | 244   |       |       |    |       | 478   |
| Pk Hr Factor    | 0.714 | 0.729 |       |       | 0.813 | Pk Hr Factor    | 0.792 | 0.847 |       |       |    |       | 0.91  |
| 7 - 9 Volume    | 304   | 436   | 0     | 0     | 740   | 4 - 6 Volume    | 437   | 452   | 0     | 0     |    |       | 889   |
| 7 - 9 Peak Hour | 07:00 | 07:15 |       |       | 07:15 | 4 - 6 Peak Hour | 16:30 | 16:45 |       |       |    |       | 16:45 |
| 7 - 9 Pk Volume | 197   | 274   | 0     | 0     | 465   | 4 - 6 Pk Volume | 247   | 244   | 0     | 0     |    |       | 478   |
| Pk Hr Factor    | 0.714 | 0.729 | 0.000 | 0.000 | 0.813 | Pk Hr Factor    | 0.792 | 0.847 | 0.000 | 0.000 |    |       | 0.91  |

# ITM Peak Hour Summary

Prepared by:



National Data &amp; Surveying Services

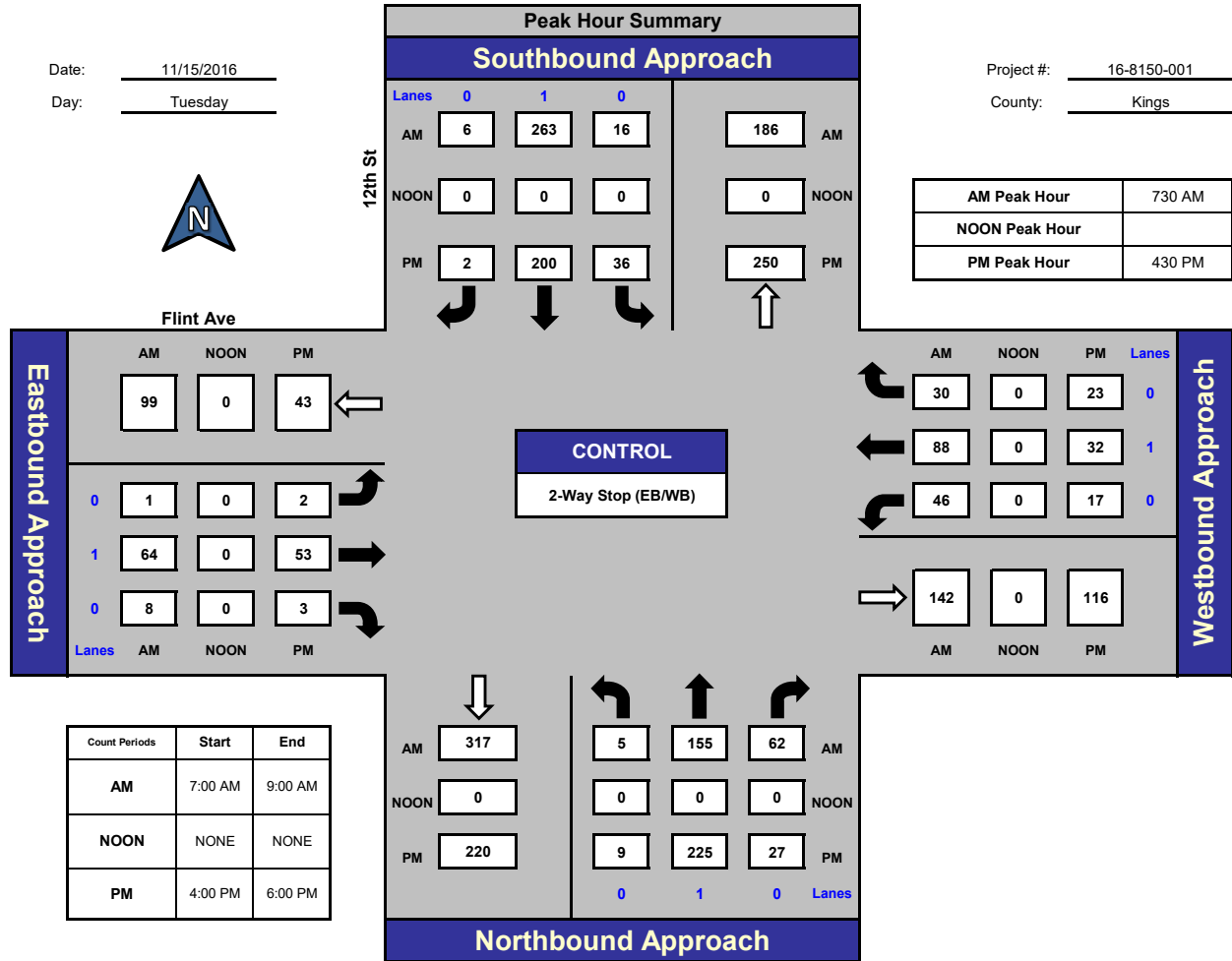
## 12th St and Flint Ave, Kings

Date: 11/15/2016

Day: Tuesday

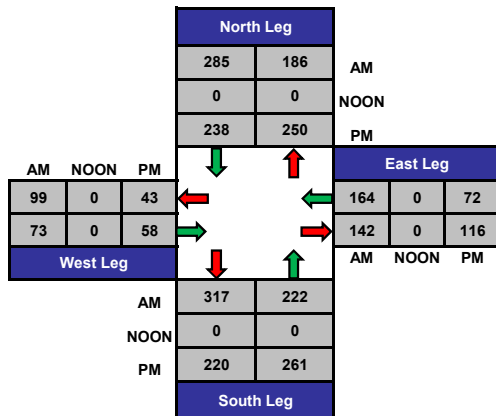
Project #: 16-8150-001

County: Kings

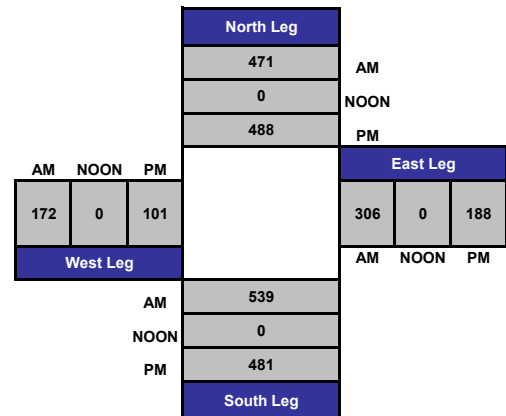


Attachment: 12th-Flint (1795 : 12th-Flint stop)

### Total Ins & Outs



### Total Volume Per Leg



# Intersection Turning Movement

Prepared by:

National Data &amp; Surveying Services

Project ID: 16-8150-001

Day: Tuesday

County Kings

Date: 11/15/2016

| AM                          |            |           |          |            |           |         |           |          |          |           |           |          |               |
|-----------------------------|------------|-----------|----------|------------|-----------|---------|-----------|----------|----------|-----------|-----------|----------|---------------|
| NS/EW Streets:              | 12th St    |           |          | 12th St    |           |         | Flint Ave |          |          | Flint Ave |           |          |               |
|                             | NORTHBOUND |           |          | SOUTHBOUND |           |         | EASTBOUND |          |          | WESTBOUND |           |          |               |
| LANES:                      | NL<br>0    | NT<br>1   | NR<br>0  | SL<br>0    | ST<br>1   | SR<br>0 | EL<br>0   | ET<br>1  | ER<br>0  | WL<br>0   | WT<br>1   | WR<br>0  | TOTAL         |
| 7:00 AM                     | 0          | 28        | 3        | 5          | 34        | 1       | 0         | 5        | 0        | 7         | 10        | 6        | 99            |
| 7:15 AM                     | 1          | 30        | 3        | 7          | 42        | 0       | 0         | 4        | 1        | 11        | 8         | 17       | 124           |
| 7:30 AM                     | 1          | 61        | 7        | 4          | 62        | 3       | 0         | 12       | 5        | 7         | 24        | 3        | 189           |
| 7:45 AM                     | 0          | 48        | 20       | 3          | 92        | 0       | 0         | 20       | 1        | 5         | 25        | 10       | 224           |
| 8:00 AM                     | 3          | 29        | 21       | 6          | 56        | 3       | 0         | 16       | 1        | 17        | 28        | 10       | 190           |
| 8:15 AM                     | 1          | 17        | 14       | 3          | 53        | 0       | 1         | 16       | 1        | 17        | 11        | 7        | 141           |
| 8:30 AM                     | 2          | 19        | 1        | 5          | 34        | 0       | 1         | 8        | 1        | 3         | 5         | 10       | 89            |
| 8:45 AM                     | 1          | 16        | 2        | 3          | 34        | 0       | 0         | 7        | 0        | 7         | 5         | 8        | 83            |
| <b>TOTAL VOLUMES :</b>      | NL<br>9    | NT<br>248 | NR<br>71 | SL<br>36   | ST<br>407 | SR<br>7 | EL<br>2   | ET<br>88 | ER<br>10 | WL<br>74  | WT<br>116 | WR<br>71 | TOTAL<br>1139 |
| <b>APPROACH %'s :</b>       | 2.74%      | 75.61%    | 21.65%   | 8.00%      | 90.44%    | 1.56%   | 2.00%     | 88.00%   | 10.00%   | 28.35%    | 44.44%    | 27.20%   |               |
| <b>PEAK HR START TIME :</b> | 730 AM     |           |          |            |           |         |           |          |          |           |           |          | <b>TOTAL</b>  |
| <b>PEAK HR VOL :</b>        | 5          | 155       | 62       | 16         | 263       | 6       | 1         | 64       | 8        | 46        | 88        | 30       | 744           |
| <b>PEAK HR FACTOR :</b>     | 0.804      |           |          | 0.750      |           |         | 0.869     |          |          | 0.745     |           |          | 0.830         |

CONTROL : 2-Way Stop (EB/WB)

Attachment: 12th-Flint (1795 : 12th-Flint stop)

# Intersection Turning Movement

Prepared by:

National Data &amp; Surveying Services

Project ID: 16-8150-001

Day: Tuesday

County: Kings

Date: 11/15/2016

County: King

Date: 12/15/2015

| NS/EW Streets:       |  | PM         |           |          |            |           |         |           |           |          |           |          |          |               |
|----------------------|--|------------|-----------|----------|------------|-----------|---------|-----------|-----------|----------|-----------|----------|----------|---------------|
|                      |  | 12th St    |           |          | 12th St    |           |         | Flint Ave |           |          | Flint Ave |          |          |               |
|                      |  | NORTHBOUND |           |          | SOUTHBOUND |           |         | EASTBOUND |           |          | WESTBOUND |          |          |               |
| LANES:               |  | NL<br>0    | NT<br>1   | NR<br>0  | SL<br>0    | ST<br>1   | SR<br>0 | EL<br>0   | ET<br>1   | ER<br>0  | WL<br>0   | WT<br>1  | WR<br>0  | TOTAL         |
| 4:00 PM              |  | 1          | 46        | 5        | 4          | 48        | 0       | 0         | 19        | 1        | 11        | 12       | 6        | 153           |
| 4:15 PM              |  | 0          | 50        | 9        | 6          | 41        | 0       | 0         | 12        | 3        | 4         | 10       | 7        | 142           |
| 4:30 PM              |  | 1          | 49        | 6        | 9          | 55        | 1       | 0         | 13        | 1        | 3         | 9        | 5        | 152           |
| 4:45 PM              |  | 1          | 46        | 8        | 7          | 46        | 1       | 1         | 13        | 0        | 7         | 7        | 3        | 140           |
| 5:00 PM              |  | 5          | 74        | 4        | 8          | 47        | 0       | 0         | 11        | 2        | 3         | 12       | 5        | 171           |
| 5:15 PM              |  | 2          | 56        | 9        | 12         | 52        | 0       | 1         | 16        | 0        | 4         | 4        | 10       | 166           |
| 5:30 PM              |  | 1          | 38        | 8        | 7          | 58        | 1       | 1         | 9         | 1        | 7         | 14       | 3        | 148           |
| 5:45 PM              |  | 1          | 34        | 8        | 6          | 45        | 1       | 0         | 9         | 2        | 7         | 7        | 4        | 124           |
| TOTAL VOLUMES :      |  | NL<br>12   | NT<br>393 | NR<br>57 | SL<br>59   | ST<br>392 | SR<br>4 | EL<br>3   | ET<br>102 | ER<br>10 | WL<br>46  | WT<br>75 | WR<br>43 | TOTAL<br>1196 |
| APPROACH %'s :       |  | 2.60%      | 85.06%    | 12.34%   | 12.97%     | 86.15%    | 0.88%   | 2.61%     | 88.70%    | 8.70%    | 28.05%    | 45.73%   | 26.22%   |               |
| PEAK HR START TIME : |  | 430 PM     |           |          |            |           |         |           |           |          |           |          |          | TOTAL         |
| PEAK HR VOL :        |  | 9          | 225       | 27       | 36         | 200       | 2       | 2         | 53        | 3        | 17        | 32       | 23       | 629           |
| PEAK HR FACTOR :     |  | 0.786      |           |          | 0.915      |           |         | 0.853     |           |          | 0.900     |          |          | 0.920         |

CONTROL : 2-Way Stop (EB/WB)

Attachment: 12th-Flint (1795 : 12th-Flint stop)

## Appendix B: 85<sup>th</sup> Percentile Speeds

Attachment: 12th-Flint (1795 : 12th-Flint stop)



TRAFFIC ENGINEERING, INC.

Traffic Engineering, Transportation Planning & Parking Solutions

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1300 E. Shaw Ave., Ste. 103

Fresno, CA 93710

(559) 570-8991

# Spot Speed Study

Prepared by: National Data &amp; Surveying Services

## County of Kings

DATE: 11/15/2016

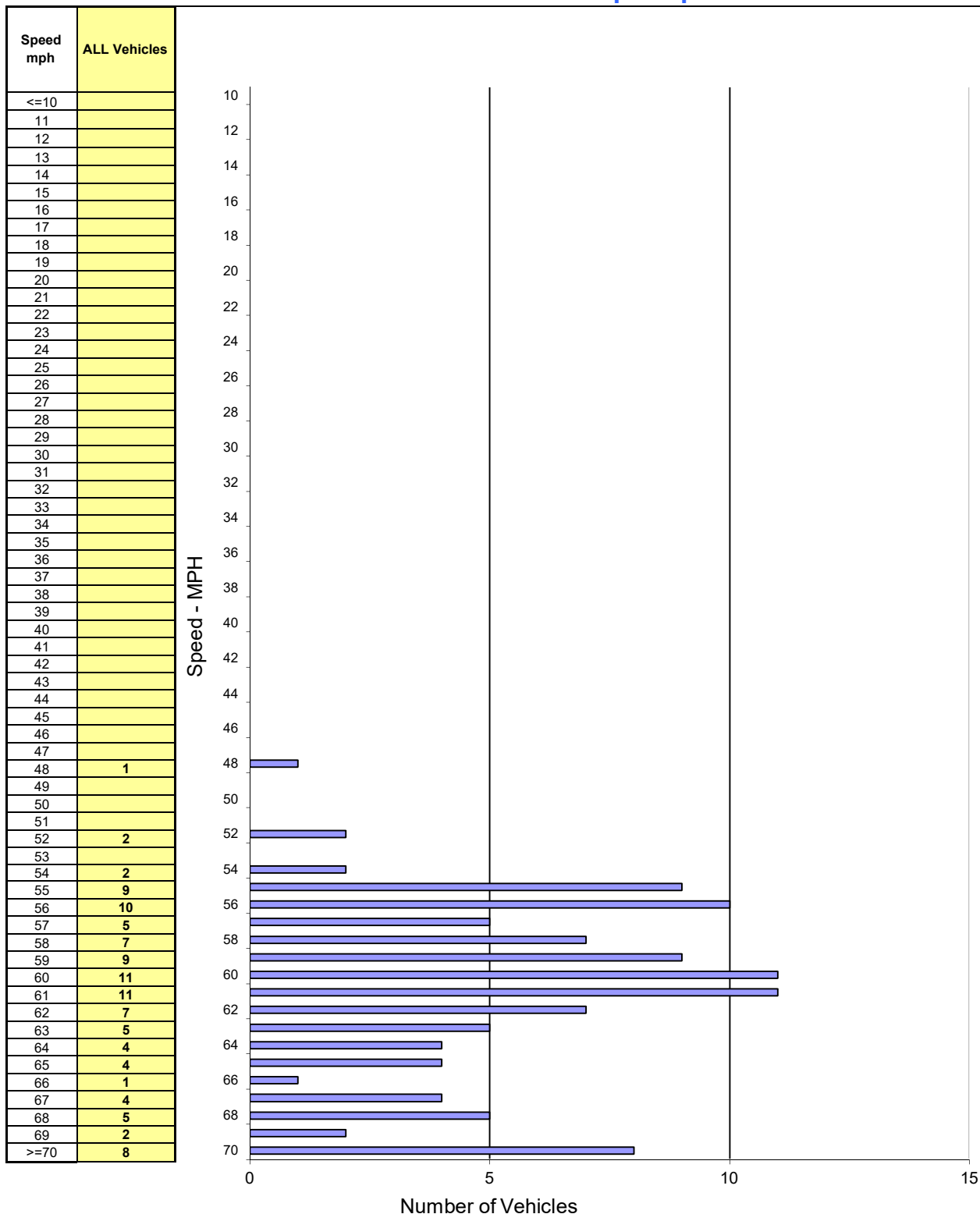
Location: 12th Ave 1200' N/O Flint Ave

TIME: 13:00-13:35

Posted Speed: 55 MPH Sunny/Clear

Project #: 16-8151-001

### Northbound & Southbound Spot Speeds



Attachment: 12th-Flint (1795 : 12th-Flint stop)

#### SPEED PARAMETERS

| Class | Count | Range   | 50th Percentile | 85th Percentile | 10 MPH Pace | # in Pace | Percent in Pace | % / # Below Pace | % / # Above Pace |
|-------|-------|---------|-----------------|-----------------|-------------|-----------|-----------------|------------------|------------------|
| ALL   | 107   | 48 - 69 | 60 mph          | 67 mph          | 55 - 64     | 78        | 73%             | 4% / 5           | 23% / 24         |

# Spot Speed Study

Prepared by: National Data &amp; Surveying Services

## County of Kings

DATE: 11/15/2016

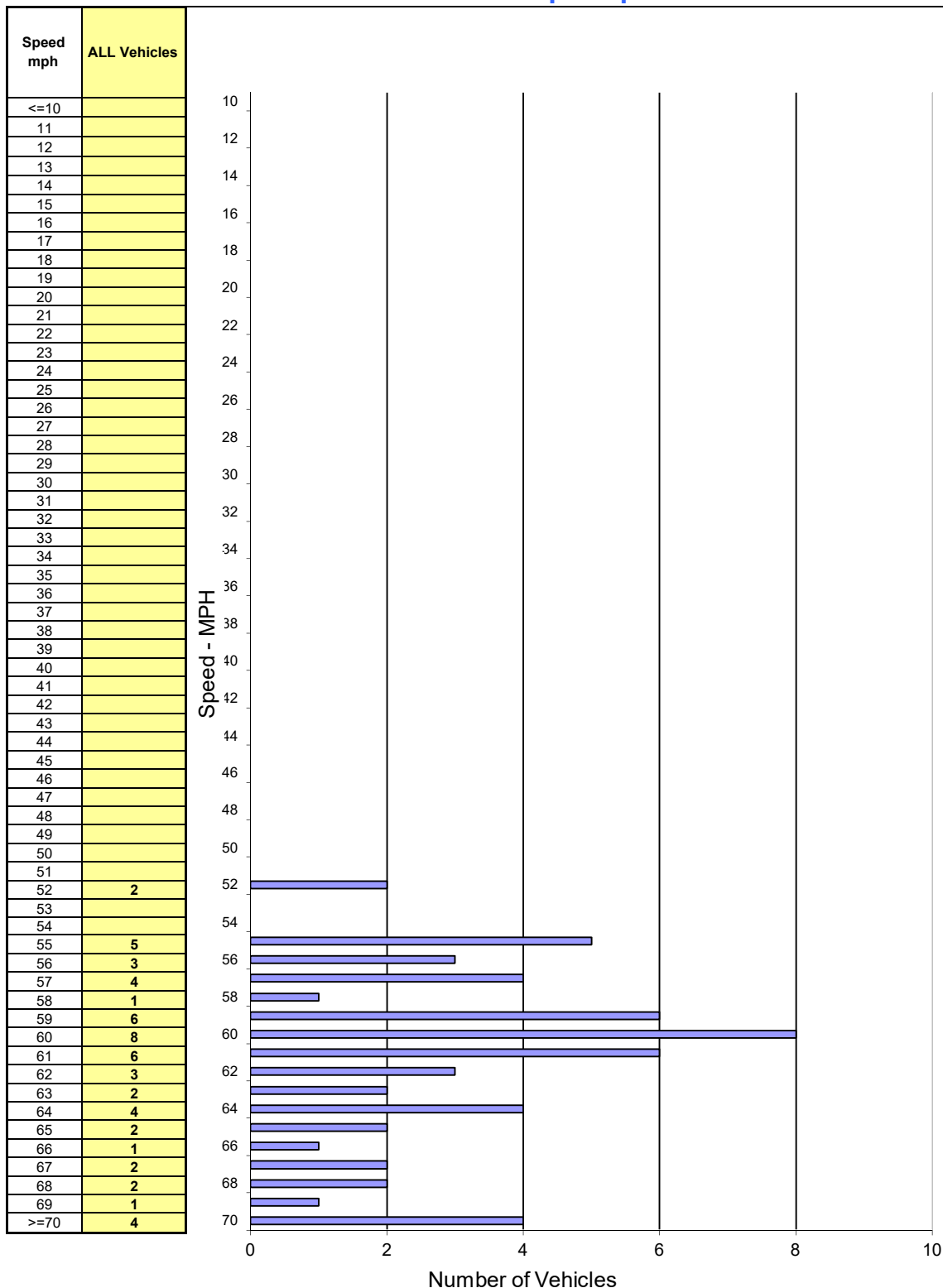
Location: 12th Ave 1200' N/O Flint Ave

TIME: 13:00-13:35

Posted Speed: 55 MPH Sunny/Clear

Project #: 16-8151-001

### Northbound Spot Speeds



Attachment: 12th-Flint (1795 : 12th-Flint stop)

Number of Vehicles

| SPEED PARAMETERS |       |         |                 |                 |             |           |                 |                  |                  |
|------------------|-------|---------|-----------------|-----------------|-------------|-----------|-----------------|------------------|------------------|
| Class            | Count | Range   | 50th Percentile | 85th Percentile | 10 MPH Pace | # in Pace | Percent in Pace | % / # Below Pace | % / # Above Pace |
| ALL              | 56    | 52 - 69 | 60 mph          | 67 mph          | 55 - 64     | 42        | 75%             | 3% / 2           | 22% / 12         |

# Spot Speed Study

Prepared by: National Data &amp; Surveying Services

## County of Kings

DATE: 11/15/2016

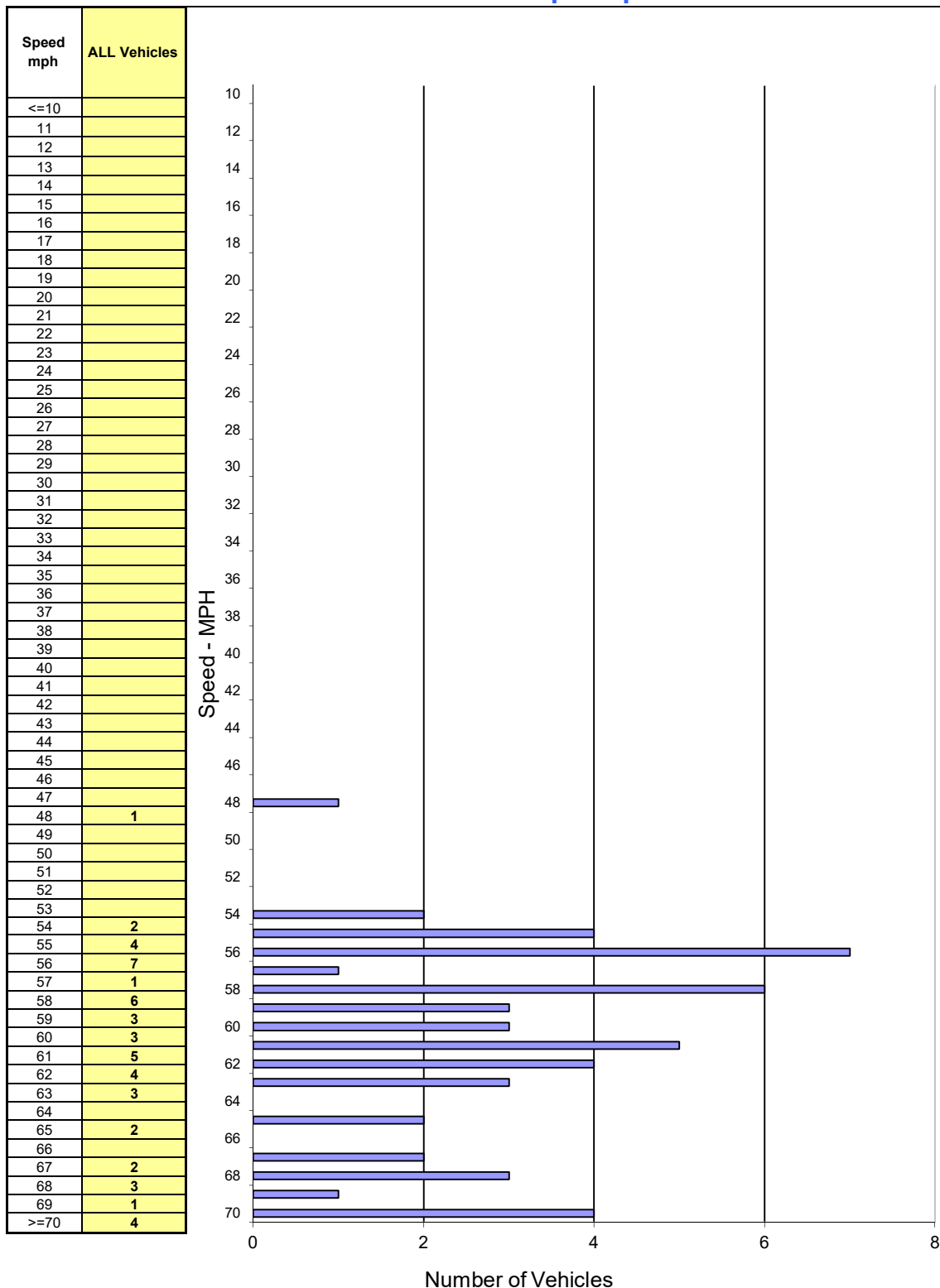
Location: 12th Ave 1200' N/O Flint Ave

TIME: 13:00-13:35

Posted Speed: 55 MPH Sunny/Clear

Project #: 16-8151-001

### Southbound Spot Speeds



Attachment: 12th-Flint (1795 : 12th-Flint stop)

#### SPEED PARAMETERS

| Class | Count | Range   | 50th Percentile | 85th Percentile | 10 MPH Pace | # in Pace | Percent in Pace | % / # Below Pace | % / # Above Pace |
|-------|-------|---------|-----------------|-----------------|-------------|-----------|-----------------|------------------|------------------|
| ALL   | 51    | 48 - 69 | 60 mph          | 68 mph          | 54 - 63     | 38        | 75%             | 1% / 1           | 24% / 12         |

# Spot Speed Study

Prepared by: National Data &amp; Surveying Services

## County of Kings

DATE: 11/15/2016

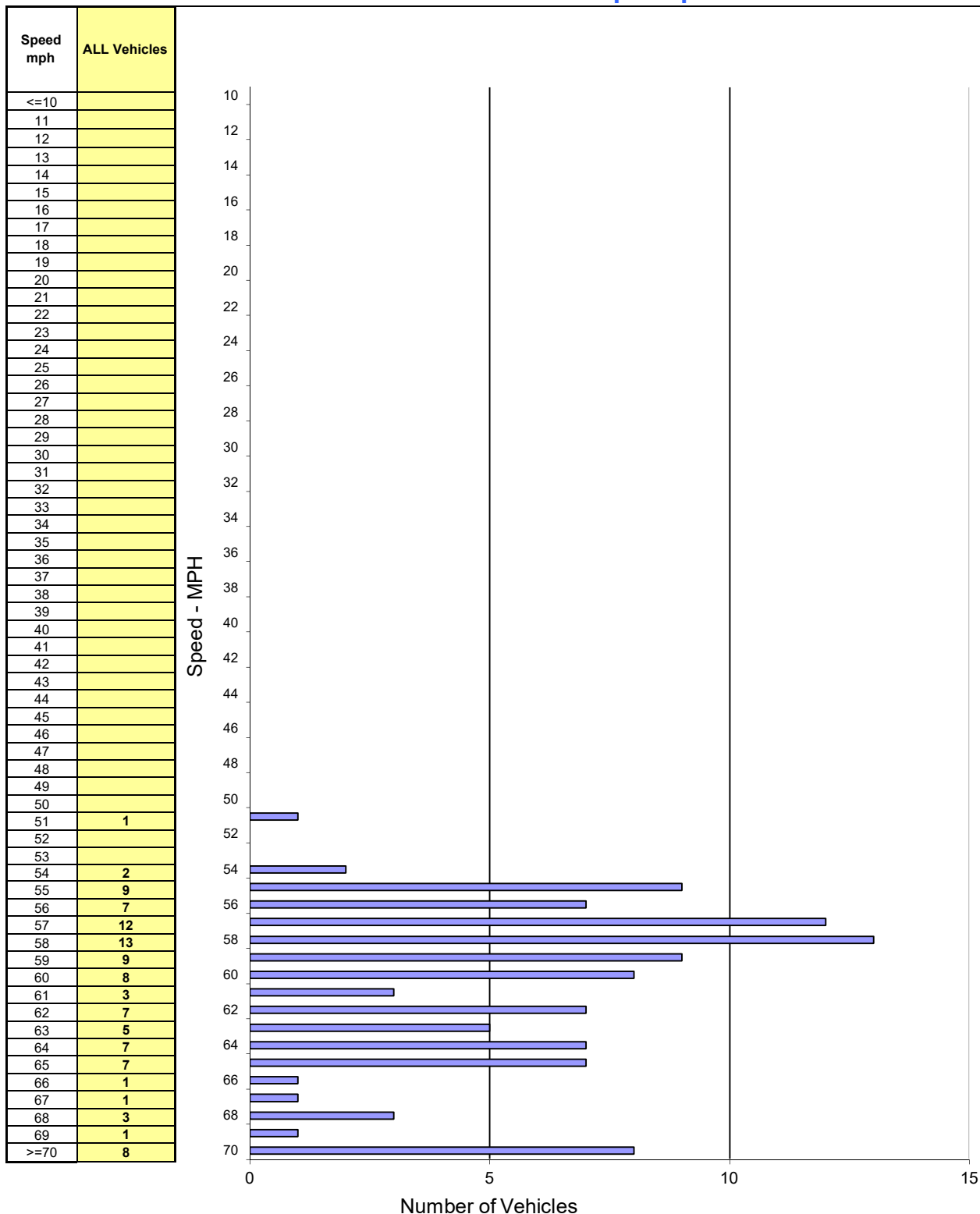
Location: 12th Ave 1200' S/O Flint Ave

TIME: 13:40-14:15

Posted Speed: 55 MPH Sunny/Clear

Project #: 16-8151-002

### Northbound & Southbound Spot Speeds



Attachment: 12th-Flint (1795 : 12th-Flint stop)

#### SPEED PARAMETERS

| Class | Count | Range   | 50th Percentile | 85th Percentile | 10 MPH Pace | # in Pace | Percent in Pace | % / # Below Pace | % / # Above Pace |
|-------|-------|---------|-----------------|-----------------|-------------|-----------|-----------------|------------------|------------------|
| ALL   | 104   | 51 - 69 | 59 mph          | 65 mph          | 55 - 64     | 80        | 77%             | 2% / 3           | 21% / 21         |

# Spot Speed Study

Prepared by: National Data &amp; Surveying Services

## County of Kings

DATE: 11/15/2016

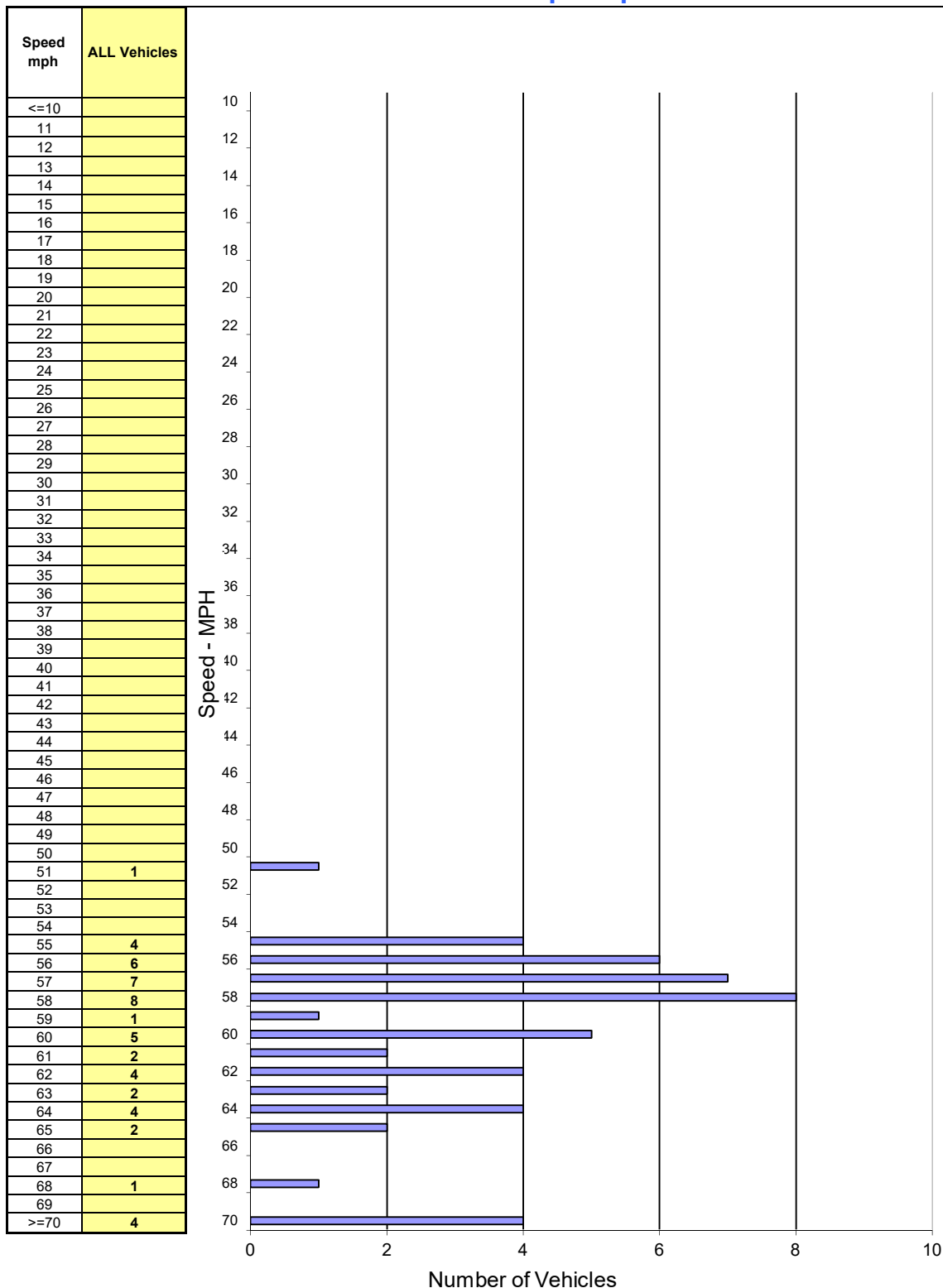
Location: 12th Ave 1200' S/O Flint Ave

TIME: 13:40-14:15

Posted Speed: 55 MPH Sunny/Clear

Project #: 16-8151-002

### Northbound Spot Speeds



Attachment: 12th-Flint (1795 : 12th-Flint stop)

| SPEED PARAMETERS |       |         |                 |                 |             |           |                 |                  |                  |
|------------------|-------|---------|-----------------|-----------------|-------------|-----------|-----------------|------------------|------------------|
| Class            | Count | Range   | 50th Percentile | 85th Percentile | 10 MPH Pace | # in Pace | Percent in Pace | % / # Below Pace | % / # Above Pace |
| ALL              | 51    | 51 - 68 | 58 mph          | 64 mph          | 55 - 64     | 43        | 84%             | 1% / 1           | 14% / 7          |

# Spot Speed Study

Prepared by: National Data &amp; Surveying Services

## County of Kings

DATE: 11/15/2016

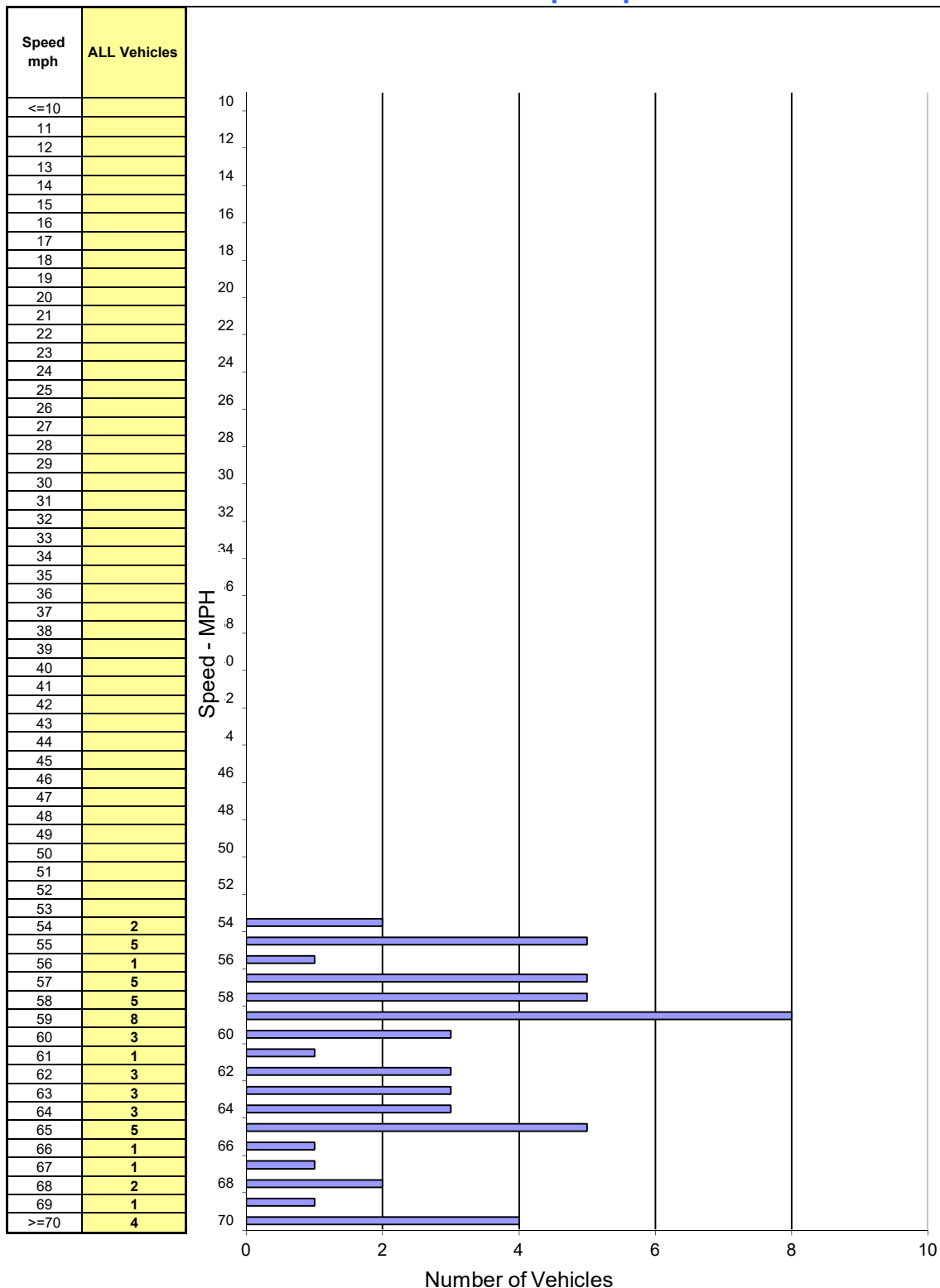
Location: 12th Ave 1200' S/O Flint Ave

TIME: 13:40-14:15

Posted Speed: 55 MPH Sunny/Clear

Project #: 16-8151-002

## Southbound Spot Speeds



Attachment: 12th-Flint (1795 : 12th-Flint stop)

| SPEED PARAMETERS |       |         |                 |                 |             |           |                 |                  |                  |
|------------------|-------|---------|-----------------|-----------------|-------------|-----------|-----------------|------------------|------------------|
| Class            | Count | Range   | 50th Percentile | 85th Percentile | 10 MPH Pace | # in Pace | Percent in Pace | % / # Below Pace | % / # Above Pace |
| ALL              | 53    | 54 - 69 | 60 mph          | 67 mph          | 55 - 64     | 37        | 70%             | 3% / 2           | 27% / 14         |

## Appendix C: LOS Worksheets

Attachment: 12th-Flint (1795 : 12th-Flint stop)



TRAFFIC ENGINEERING, INC.

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Fresno, CA 93710

(559) 570-8991

HCM 2010 TWSC  
1: 12th Ave & Flint Ave

Existing AM Peak  
12/21/2016

| Intersection             |        |       |       |        |       |       |        |      |      |        |      |      |
|--------------------------|--------|-------|-------|--------|-------|-------|--------|------|------|--------|------|------|
| Int Delay, s/veh         | 7.7    |       |       |        |       |       |        |      |      |        |      |      |
|                          |        |       |       |        |       |       |        |      |      |        |      |      |
| Movement                 | EBL    | EBT   | EBR   | WBL    | WBT   | WBR   | NBL    | NBT  | NBR  | SBL    | SBT  | SBR  |
| Vol, veh/h               | 1      | 64    | 8     | 46     | 88    | 30    | 5      | 155  | 62   | 16     | 263  | 6    |
| Conflicting Peds, #/hr   | 0      | 0     | 0     | 0      | 0     | 0     | 0      | 0    | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop  | Stop   | Stop  | Stop  | Free   | Free | Free | Free   | Free | Free |
| RT Channelized           | -      | -     | None  | -      | -     | None  | -      | -    | None | -      | -    | None |
| Storage Length           | -      | -     | -     | -      | -     | -     | -      | -    | -    | -      | -    | -    |
| Veh in Median Storage, # | -      | 0     | -     | -      | 0     | -     | -      | 0    | -    | -      | 0    | -    |
| Grade, %                 | -      | 0     | -     | -      | 0     | -     | -      | 0    | -    | -      | 0    | -    |
| Peak Hour Factor         | 87     | 87    | 87    | 75     | 75    | 75    | 80     | 80   | 80   | 75     | 75   | 75   |
| Heavy Vehicles, %        | 6      | 6     | 6     | 6      | 6     | 6     | 6      | 6    | 6    | 6      | 6    | 6    |
| Mvmt Flow                | 1      | 74    | 9     | 61     | 117   | 40    | 6      | 194  | 78   | 21     | 351  | 8    |
|                          |        |       |       |        |       |       |        |      |      |        |      |      |
| Major/Minor              | Minor2 |       |       | Minor1 |       |       | Major1 |      |      | Major2 |      |      |
| Conflicting Flow All     | 721    | 681   | 355   | 684    | 646   | 233   | 359    | 0    | 0    | 271    | 0    | 0    |
| Stage 1                  | 397    | 397   | -     | 245    | 245   | -     | -      | -    | -    | -      | -    | -    |
| Stage 2                  | 324    | 284   | -     | 439    | 401   | -     | -      | -    | -    | -      | -    | -    |
| Critical Hdwy            | 7.16   | 6.56  | 6.26  | 7.16   | 6.56  | 6.26  | 4.16   | -    | -    | 4.16   | -    | -    |
| Critical Hdwy Stg 1      | 6.16   | 5.56  | -     | 6.16   | 5.56  | -     | -      | -    | -    | -      | -    | -    |
| Critical Hdwy Stg 2      | 6.16   | 5.56  | -     | 6.16   | 5.56  | -     | -      | -    | -    | -      | -    | -    |
| Follow-up Hdwy           | 3.554  | 4.054 | 3.354 | 3.554  | 4.054 | 3.354 | 2.254  | -    | -    | 2.254  | -    | -    |
| Pot Cap-1 Maneuver       | 337    | 368   | 680   | 357    | 385   | 796   | 1178   | -    | -    | 1270   | -    | -    |
| Stage 1                  | 621    | 596   | -     | 750    | 696   | -     | -      | -    | -    | -      | -    | -    |
| Stage 2                  | 680    | 669   | -     | 589    | 594   | -     | -      | -    | -    | -      | -    | -    |
| Platoon blocked, %       |        |       |       |        |       |       |        | -    | -    |        | -    | -    |
| Mov Cap-1 Maneuver       | 238    | 358   | 680   | 291    | 375   | 796   | 1178   | -    | -    | 1270   | -    | -    |
| Mov Cap-2 Maneuver       | 238    | 358   | -     | 291    | 375   | -     | -      | -    | -    | -      | -    | -    |
| Stage 1                  | 617    | 583   | -     | 746    | 692   | -     | -      | -    | -    | -      | -    | -    |
| Stage 2                  | 533    | 665   | -     | 497    | 582   | -     | -      | -    | -    | -      | -    | -    |
|                          |        |       |       |        |       |       |        |      |      |        |      |      |
| Approach                 | EB     |       |       | WB     |       |       | NB     |      |      | SB     |      |      |
| HCM Control Delay, s     | 17.3   |       |       | 26.4   |       |       | 0.2    |      |      | 0.4    |      |      |
| HCM LOS                  | C      |       |       | D      |       |       |        |      |      |        |      |      |
|                          |        |       |       |        |       |       |        |      |      |        |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR   | EBLn1  | WBLn1 | SBL   | SBT    | SBR  |      |        |      |      |
| Capacity (veh/h)         | 1178   | -     | -     | 375    | 381   | 1270  | -      | -    |      |        |      |      |
| HCM Lane V/C Ratio       | 0.005  | -     | -     | 0.224  | 0.574 | 0.017 | -      | -    |      |        |      |      |
| HCM Control Delay (s)    | 8.1    | 0     | -     | 17.3   | 26.4  | 7.9   | 0      | -    |      |        |      |      |
| HCM Lane LOS             | A      | A     | -     | C      | D     | A     | A      | -    |      |        |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -     | 0.8    | 3.5   | 0.1   | -      | -    |      |        |      |      |

Attachment: 12th-Flint (1795 : 12th-Flint stop)

HCM 2010 TWSC  
1: 12th Ave & Flint Ave

Existing PM Peak  
12/21/2016

| Intersection             |        |       |       |        |       |       |        |      |      |        |      |      |
|--------------------------|--------|-------|-------|--------|-------|-------|--------|------|------|--------|------|------|
| Int Delay, s/veh         | 3.8    |       |       |        |       |       |        |      |      |        |      |      |
|                          |        |       |       |        |       |       |        |      |      |        |      |      |
| Movement                 | EBL    | EBT   | EBR   | WBL    | WBT   | WBR   | NBL    | NBT  | NBR  | SBL    | SBT  | SBR  |
| Vol, veh/h               | 2      | 53    | 3     | 17     | 32    | 23    | 9      | 225  | 27   | 36     | 200  | 2    |
| Conflicting Peds, #/hr   | 0      | 0     | 0     | 0      | 0     | 0     | 0      | 0    | 0    | 0      | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop  | Stop   | Stop  | Stop  | Free   | Free | Free | Free   | Free | Free |
| RT Channelized           | -      | -     | None  | -      | -     | None  | -      | -    | None | -      | -    | None |
| Storage Length           | -      | -     | -     | -      | -     | -     | -      | -    | -    | -      | -    | -    |
| Veh in Median Storage, # | -      | 0     | -     | -      | 0     | -     | -      | 0    | -    | -      | 0    | -    |
| Grade, %                 | -      | 0     | -     | -      | 0     | -     | -      | 0    | -    | -      | 0    | -    |
| Peak Hour Factor         | 85     | 85    | 85    | 90     | 90    | 90    | 79     | 79   | 79   | 92     | 92   | 92   |
| Heavy Vehicles, %        | 6      | 6     | 6     | 6      | 6     | 6     | 6      | 6    | 6    | 6      | 6    | 6    |
| Mvmt Flow                | 2      | 62    | 4     | 19     | 36    | 26    | 11     | 285  | 34   | 39     | 217  | 2    |
|                          |        |       |       |        |       |       |        |      |      |        |      |      |
| Major/Minor              | Minor2 |       |       | Minor1 |       |       | Major1 |      |      | Major2 |      |      |
| Conflicting Flow All     | 652    | 639   | 218   | 655    | 623   | 302   | 220    | 0    | 0    | 319    | 0    | 0    |
| Stage 1                  | 297    | 297   | -     | 325    | 325   | -     | -      | -    | -    | -      | -    | -    |
| Stage 2                  | 355    | 342   | -     | 330    | 298   | -     | -      | -    | -    | -      | -    | -    |
| Critical Hdwy            | 7.16   | 6.56  | 6.26  | 7.16   | 6.56  | 6.26  | 4.16   | -    | -    | 4.16   | -    | -    |
| Critical Hdwy Stg 1      | 6.16   | 5.56  | -     | 6.16   | 5.56  | -     | -      | -    | -    | -      | -    | -    |
| Critical Hdwy Stg 2      | 6.16   | 5.56  | -     | 6.16   | 5.56  | -     | -      | -    | -    | -      | -    | -    |
| Follow-up Hdwy           | 3.554  | 4.054 | 3.354 | 3.554  | 4.054 | 3.354 | 2.254  | -    | -    | 2.254  | -    | -    |
| Pot Cap-1 Maneuver       | 376    | 389   | 812   | 374    | 397   | 728   | 1326   | -    | -    | 1219   | -    | -    |
| Stage 1                  | 703    | 660   | -     | 679    | 642   | -     | -      | -    | -    | -      | -    | -    |
| Stage 2                  | 654    | 631   | -     | 675    | 660   | -     | -      | -    | -    | -      | -    | -    |
| Platoon blocked, %       |        |       |       |        |       |       |        | -    | -    |        | -    | -    |
| Mov Cap-1 Maneuver       | 325    | 371   | 812   | 313    | 379   | 728   | 1326   | -    | -    | 1219   | -    | -    |
| Mov Cap-2 Maneuver       | 325    | 371   | -     | 313    | 379   | -     | -      | -    | -    | -      | -    | -    |
| Stage 1                  | 696    | 636   | -     | 672    | 636   | -     | -      | -    | -    | -      | -    | -    |
| Stage 2                  | 590    | 625   | -     | 584    | 636   | -     | -      | -    | -    | -      | -    | -    |
|                          |        |       |       |        |       |       |        |      |      |        |      |      |
| Approach                 | EB     |       |       | WB     |       |       | NB     |      |      | SB     |      |      |
| HCM Control Delay, s     | 16.5   |       |       | 15.5   |       |       | 0.3    |      |      | 1.2    |      |      |
| HCM LOS                  | C      |       |       | C      |       |       |        |      |      |        |      |      |
|                          |        |       |       |        |       |       |        |      |      |        |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR   | EBLn1  | WBLn1 | SBL   | SBT    | SBR  |      |        |      |      |
| Capacity (veh/h)         | 1326   | -     | -     | 380    | 423   | 1219  | -      | -    |      |        |      |      |
| HCM Lane V/C Ratio       | 0.009  | -     | -     | 0.18   | 0.189 | 0.032 | -      | -    |      |        |      |      |
| HCM Control Delay (s)    | 7.7    | 0     | -     | 16.5   | 15.5  | 8.1   | 0      | -    |      |        |      |      |
| HCM Lane LOS             | A      | A     | -     | C      | C     | A     | A      | -    |      |        |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -     | 0.6    | 0.7   | 0.1   | -      | -    |      |        |      |      |

Attachment: 12th-Flint (1795 : 12th-Flint stop)

Appendix D: Warrants

Attachment: 12th-Flint (1795 : 12th-Flint stop)



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# MULTI-WAY STOP WARRANT

MAJOR STREET: **12th Avenue**  
MINOR STREET: **Flint Avenue**

CRITICAL APPROACH SPEED: **68**

CALC: **JL**  
CHK: **JLB**

COUNT DATE: 11/15/16  
DATE: 12/27/16  
DATE: 12/27/16

|      | 12th Avenue | 12th Avenue | Flint Avenue | Flint Avenue | 12th Avenue                  | Flint Avenue                 | Intersection Approach Totals |
|------|-------------|-------------|--------------|--------------|------------------------------|------------------------------|------------------------------|
|      | NB Approach | SB Approach | EB Approach  | WB Approach  | Total Volume Both Approaches | Total Volume Both Approaches |                              |
| Hour | Volume      | Volume      | Volume       | Volume       | Volume                       | Volume                       | Volume                       |
| 0    | 10          | 7           | 1            | 4            | 17                           | 5                            | 22                           |
| 1    | 11          | 5           | 1            | 1            | 16                           | 2                            | 18                           |
| 2    | 3           | 9           | 1            | 3            | 12                           | 4                            | 16                           |
| 3    | 8           | 11          | 1            | 2            | 19                           | 3                            | 22                           |
| 4    | 25          | 28          | 1            | 11           | 53                           | 12                           | 65                           |
| 5    | 67          | 44          | 13           | 29           | 111                          | 42                           | 153                          |
| 6    | 116         | 108         | 25           | 66           | 224                          | 91                           | 315                          |
| 7    | 200         | 254         | 49           | 133          | 454                          | 182                          | 636                          |
| 8    | 124         | 182         | 50           | 130          | 306                          | 180                          | 486                          |
| 9    | 106         | 130         | 26           | 54           | 236                          | 80                           | 316                          |
| 10   | 113         | 122         | 23           | 65           | 235                          | 88                           | 323                          |
| 11   | 120         | 133         | 36           | 64           | 253                          | 100                          | 353                          |
| 12   | 136         | 135         | 21           | 59           | 271                          | 80                           | 351                          |
| 13   | 143         | 143         | 24           | 70           | 286                          | 94                           | 380                          |
| 14   | 206         | 138         | 46           | 94           | 344                          | 140                          | 484                          |
| 15   | 231         | 186         | 80           | 122          | 417                          | 202                          | 619                          |
| 16   | 217         | 213         | 63           | 83           | 430                          | 146                          | 576                          |
| 17   | 240         | 239         | 49           | 79           | 479                          | 128                          | 607                          |
| 18   | 149         | 135         | 39           | 48           | 284                          | 87                           | 371                          |
| 19   | 91          | 65          | 15           | 33           | 156                          | 48                           | 204                          |
| 20   | 62          | 56          | 12           | 20           | 118                          | 32                           | 150                          |
| 21   | 54          | 28          | 15           | 14           | 82                           | 29                           | 111                          |
| 22   | 25          | 19          | 6            | 9            | 44                           | 15                           | 59                           |
| 23   | 12          | 14          | 3            | 6            | 26                           | 9                            | 35                           |

## CONDITION A - SIGNAL WARRANT(S)

SIGNAL WARRANT(S) MET

☐ YES ☒ NO

WHERE TRAFFIC SIGNALS ARE JUSTIFIED, THE MULTI-WAY STOP IS AN INTERIM MEASURE THAT CAN BE INSTALLED QUICKLY TO CONTROL TRAFFIC WHILE ARRANGEMENTS ARE BEING MADE FOR THE INSTALLATION OF THE TRAFFIC CONTROL SIGNAL.

\*        HIGHEST 8 HOURS

## CONDITION B - COLLISIONS

WARRANT MET

☒ YES ☐ NO

| Year Beginning | Collisions Reported |
|----------------|---------------------|
| Aug-13         | 1                   |
| Aug-14         | 5                   |
| Aug-15         | 4                   |

FIVE OR MORE REPORTED COLLISIONS IN A 12-MONTH PERIOD THAT ARE SUSCEPTIBLE TO CORRECTION BY A MULTI-WAY STOP INSTALLATION. SUCH INCLUDES RIGHT-TURN AND LEFT-TURN COLLISIONS AS WELL AS RIGHT-ANGLE COLLISIONS.

## CONDITION C - MINIMUM VOLUMES

WARRANT MET ☐ YES ☒ NO

MAJOR STREET (TOTAL OF BOTH APPROACHES) AT LEAST 300 (210) TRIPS PER HOUR FOR ANY 8 HOURS?

☒ YES ☐ NO

HIGHEST MINOR STREET (TOTAL OF BOTH APPROACHES) AT LEAST 200 (140) TRIPS PER HOUR FOR THE SAME 8 HOURS?

☐ YES ☒ NO

AND WITH AN AVERAGE DELAY TO THE MINOR-STREET VEHICULAR TRAFFIC OF AT LEAST 30 SEC. DURING THE HIGHEST HOUR. (XX) = VOLUMES FROM > 40 MPH

## CONDITION D - 80% OF THE MINIMUM VALUES OF CRITERIA B, C.1, C.2

WARRANT MET

☐ YES ☒ NO

WHERE NO SINGLE CRITERION IS SATISFIED, BUT WHERE CRITERIA B, C.1, AND C.2 ARE ALL SATISFIED TO 80 PERCENT OF THE MINIMUM VALUES. CRITERION C.3 IS EXCLUDED FROM THIS CONDITION.

Attachment: 12th-Flint (1795 : 12th-Flint stop)

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**California MUTCD 2014 Edition**  
(FHWA'S MUTCD 2009 Edition, as amended for use in California)  
**Signal Warrant Analysis**

Page 841

**Figure 4C-101 (CA). Traffic Signal Warrants Worksheet**

|      |       |     |     |            |                     |
|------|-------|-----|-----|------------|---------------------|
| 006  | KINGS | n/a | n/a | COUNT DATE | 11/15/2016          |
| DIST | CO    | RTE | KPM | CALC       | JL DATE 12/21/2016  |
|      |       |     |     | CHK        | JLB DATE 12/28/2016 |

|                               |                         |    |     |
|-------------------------------|-------------------------|----|-----|
| Major St: <b>12th Avenue</b>  | Critical Approach Speed | 65 | MPH |
| Minor St: <b>Flint Avenue</b> | Critical Approach Speed | 55 | MPH |

Critical speed of major street traffic > 64 km/h (40 mph).....

In built up area of isolated community of < 10,000 population .....

☒ }  
☐ }  
☐ }

RURAL (R)  
URBAN (U)

**WARRANT 1 - Eight Hour Vehicular Volume**

(Condition A or Condition B or combination of A and B must be satisfied)

**Condition A - Minimum Vehicle Volume**

100% SATISFIED

YES ☐ NO ☒

80% SATISFIED

YES ☐ NO ☒

| APPROACH           | LANES | MINIMUM REQUIREMENTS<br>(80% SHOWN IN BRACKETS) |       |           |       | 7:00 a.m. | 8:00 a.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. | 6:00 p.m. | Hour |
|--------------------|-------|-------------------------------------------------|-------|-----------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|
|                    |       | U                                               | R     | U         | R     |           |           |           |           |           |           |           |           |      |
|                    |       | 1                                               |       | 2 or More |       |           |           |           |           |           |           |           |           |      |
| Both Approaches    |       | 500                                             | 350   | 600       | 420   | 454       | 306       | 286       | 344       | 417       | 430       | 479       | 284       |      |
| Major Street       |       | (400)                                           | (280) | (480)     | (336) | 454       | 306       | 286       | 344       | 417       | 430       | 479       | 284       |      |
| Highest Approaches |       | 150                                             | 105   | 200       | 140   | 133       | 130       | 70        | 94        | 122       | 83        | 79        | 48        |      |
| Minor Street       |       | (120)                                           | (84)  | (160)     | (112) | 133       | 130       | 70        | 94        | 122       | 83        | 79        | 48        |      |

**Condition B - Interruption of Continuous Traffic**

100% SATISFIED

YES ☐ NO ☒

80% SATISFIED

YES ☐ NO ☒

| APPROACH           | LANES | MINIMUM REQUIREMENTS<br>(80% SHOWN IN BRACKETS) |       |           |       | 7:00 a.m. | 8:00 a.m. | 12:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. | 6:00 p.m. | Hour |
|--------------------|-------|-------------------------------------------------|-------|-----------|-------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|------|
|                    |       | U                                               | R     | U         | R     |           |           |            |           |           |           |           |           |      |
|                    |       | 1                                               |       | 2 or More |       |           |           |            |           |           |           |           |           |      |
| Both Approaches    |       | 750                                             | 525   | 900       | 630   | 454       | 306       | 286        | 344       | 417       | 430       | 479       | 284       |      |
| Major Street       |       | (600)                                           | (420) | (720)     | (504) | 454       | 306       | 286        | 344       | 417       | 430       | 479       | 284       |      |
| Highest Approaches |       | 75                                              | 53    | 100       | 70    | 133       | 130       | 70         | 94        | 122       | 83        | 79        | 48        |      |
| Minor Street       |       | (60)                                            | (42)  | (80)      | (56)  | 133       | 130       | 70         | 94        | 122       | 83        | 79        | 48        |      |

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

**Combination of Conditions A & B**

SATISFIED

YES ☐ NO ☒

| REQUIREMENT                   | WARRANT                               |   | FULFILLED                                                           |
|-------------------------------|---------------------------------------|---|---------------------------------------------------------------------|
| TWO WARRANTS SATISFIED<br>80% | 1. MINIMUM VEHICULAR VOLUME           | X | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|                               | 2. INTERRUPTION OF CONTINUOUS TRAFFIC | X |                                                                     |

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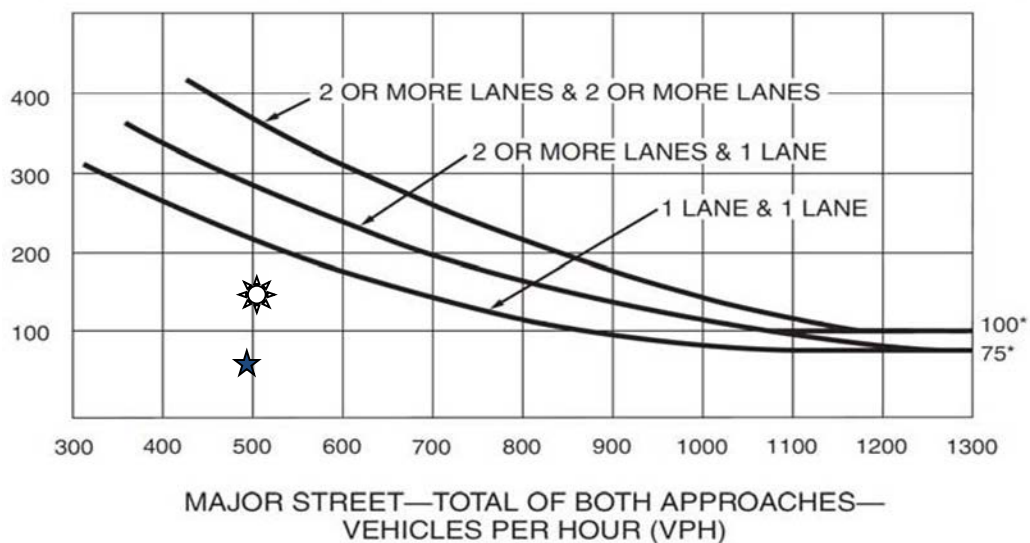
Attachment: 12th-Flint (1795 : 12th-Flint stop)

### Peak Hour Warrant (Rural Areas)

Existing - AM (PM) Peak Hour  
Intersection: 12th Avenue at Flint Avenue

**Figure 4C-4. Warrant 3, Peak Hour (70% Factor)**  
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Flint Ave  
Highest Approach  
Volume = 149 (61) VPH



\*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

12th Ave Total Volume = 507 (499) VPH

☀ AM Peak Hour Volume – Signal Warrant is Not Met

★ PM Peak Hour Volume – Signal Warrant is Not Met

Source: *California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)*  
Part 4: Highway Traffic Signals, November 7, 2014

Prepared By:



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Attachment: 12th-Flint (1795 : 12th-Flint stop)

### Warrant 7 – Crash Experience

August 26th, 2013 through August 25th, 2016

Intersection: 12th Avenue at Flint Avenue

#### WARRANT 7 - Crash Experience Warrant (All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

|                                                                                                                       |                                                                                                                                                                                      |                                                                     |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency. |                                                                                                                                                                                      | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| REQUIREMENTS                                                                                                          | Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash. | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 5 OR MORE                                                                                                             |                                                                                                                                                                                      |                                                                     |
| REQUIREMENTS                                                                                                          | CONDITIONS                                                                                                                                                                           | ✓                                                                   |
| ONE CONDITION SATISFIED 80%                                                                                           | Warrant 1, Condition A - Minimum Vehicular Volume                                                                                                                                    |                                                                     |
|                                                                                                                       | OR, Warrant 1, Condition B - Interruption of Continuous Traffic                                                                                                                      |                                                                     |
|                                                                                                                       | OR, Warrant 4, Pedestrian Volume Condition<br>Ped Vol $\geq$ 80% of Figure 4C-5 through Figure 4C-8                                                                                  |                                                                     |
|                                                                                                                       |                                                                                                                                                                                      | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |

Attachment: 12th-Flint (1795 : 12th-Flint stop)

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)  
Part 4: Highway Traffic Signals, November 7, 2014

Prepared By:



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**AGENDA  
STAFF REPORT**

**MEETING DATE:** 1/26/2017

**AGENDA SECTION:** 4

**SUBJECT:**  
City Council Actions

---

**FISCAL IMPACT:**

**ATTACHMENTS:**  
City Council Actions

## **CITY COUNCIL ACTIONS**

### Meeting of December 6, 2016

None to report

### Meeting of December 20, 2016

1. Approve Notice of Completion for Tract No. 843, Independence Subdivision, Unit III.
2. Approve Notice of Completion for FY 16/17 Centerline Striping Project.
3. Approve Purchase of decorative street lights for various downtown locations.

### Meeting of January 3, 2017

Cancelled

### Meeting January 17, 2017

1. Adopt Ordinance 16-14 Amending Section 10.32.010 of Municipal Code to include a Two-way Stop on South Street at Phillips Street.
2. Permission to Advertise the FY 16/17 Slurry Seal Project.
3. Permission to Advertise the FY 16/17 Cape Seal and Fiberized Micro-Surfacing Projects.
4. Approve purchase of traffic signal poles and mast arm equipment for 11<sup>th</sup> Avenue at Houston Traffic Signal Project and authorize to advertise project for construction bids.