

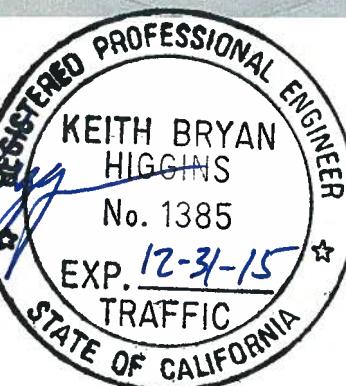
# Traffic Impact Analysis Capital One Building at Schilling Place

Salinas, CA



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## Executive Summary

This report presents the results of the Traffic Impact Analysis conducted by Hatch Mott MacDonald (HMM) to assess the potential traffic impacts associated with the relocation of County of Monterey (County) personnel to two currently vacant buildings located at 1441 and 1488 Schilling Place in the City of Salinas. The structure at 1441 Schilling Place is a two-story, 202,358 square foot office building and the structure at 1488 Schilling Place is a 91,707 square foot manufacturing/warehouse building. The County of Monterey is proposing to relocate County personnel to the two buildings on the project site. Although the number of employees to be relocated to the project site was not available at the time of writing, the County is proposing to use the 202,358 square foot building for office space, and the 91,707 square foot building for warehousing.

The traffic scenarios analyzed for this study include:

1. Existing Conditions<sup>1</sup>
2. Existing Plus Project Conditions<sup>2</sup>
3. General Plan Buildout Conditions<sup>3</sup>

The study intersections analyzed for this study include:

1. Harkins Road / Abbott Street
2. Harkins Road / Hansen Street
3. Airport Boulevard / Hansen Street
4. Airport Boulevard / Terven Avenue
5. S. Sanborn Road – E. Blanco Road / Abbott Street

Project trip generation was estimated based on trip generation rates published in the Institute of Transportation Engineers' (ITE) Trip Generation handbook, 9th Edition, 2012 for a government office complex. The project is estimated to generate 5,976 daily trips, of which 475 will be generated during the AM peak hour and 606 will be generated during the PM peak hour. A comparison of the "existing" 2008 traffic volumes at the Harkins Road / Hansen Street intersection (which provides the only access to the project site) with the "Existing Plus Project" traffic volumes indicates the project trip generation estimate is conservatively on the high side. A brief description of the operating conditions at each study intersection under Existing Plus Project conditions is provided below.

- 1) The signalized Harkins Road / Abbott Street intersection will operate at an overall LOS D during the AM peak and PM peak hours.
- 2) The signalized Harkins Road / Hansen Street intersection will operate at an overall LOS C during the AM peak hour and LOS E during the PM peak hour.
- 3) The unsignalized Airport Boulevard / Hansen Street intersection will operate at an overall LOS A during the AM peak hour and LOS D during the PM peak hour. The worst approach (northbound Airport Boulevard) will operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

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<sup>1</sup> Based on traffic counts conducted in 2013 and 2014.

<sup>2</sup> 2013 and 2014 traffic volumes plus traffic generated by County employees relocating to Capital One site.

<sup>3</sup> Referenced from the *Salinas Ag-Industrial Center Traffic Impact Analysis Report*, 2009.

- 4) The signalized Airport Boulevard / Terven Avenue intersection will operate at an overall LOS E during the AM peak hour and LOS D during the PM peak hour.
- 5) The signalized Sanborn Road-Blanco Road / Abbott Street intersection will operate at an overall LOS D during the AM and PM peak hours.

Project impacts were determined by comparing Existing (2014) traffic operations to Existing (2014) Plus Project traffic operations. Based on the City of Salinas and Caltrans significance criteria, the project will have a significant impact at the following intersections:

- 2) Harkins Road / Hansen Street (City of Salinas intersection) – The addition of project traffic will cause operations at this intersection to deteriorate from an acceptable LOS D during the PM peak hour to an unacceptable LOS E.
- 3) Airport Boulevard / Hansen Street (City of Salinas intersection) – Trips added by the proposed project will cause operations at this intersection to worsen from an unacceptable LOS E during the PM peak hour to an unacceptable LOS F at the worst approach of this intersection during the PM peak hour.
- 4) Airport Boulevard / Terven Avenue (Caltrans intersection) – This intersection currently operates at an unacceptable LOS E during the AM peak hour and unacceptable LOS D during the PM peak hour. The addition of project traffic will add 0.01 or more to the critical movement's volume-to-capacity ratio during the AM and PM peak hours.

In addition to Existing plus Project conditions, intersection Levels of Service under General Plan Buildout traffic conditions were also reviewed, referenced from the Salinas Ag-Industrial Center Traffic Impact Analysis Report (HMM 2009). A brief description of the operating conditions at each study intersection under General Plan Buildout conditions is provided below.

- 1) The signalized Harkins Road / Abbott Street intersection will operate at an unacceptable overall LOS E during the AM peak and PM peak hours.
- 2) The signalized Harkins Road / Hansen Street intersection will operate at an overall LOS D during the AM peak hour and an unacceptable LOS E during the PM peak hour.
- 3) The unsignalized Airport Boulevard / Hansen Street intersection will operate at an overall LOS A during the AM and PM peak hours. The worst approach (northbound Airport Boulevard) will operate at LOS C during the AM peak hour and LOS E during the PM peak hour.
- 4) The signalized Airport Boulevard / Terven Avenue intersection will operate at an overall LOS D during the AM and PM peak hours.
- 5) The signalized Sanborn Road-Blanco Road / Abbott Street intersection will operate at an overall unacceptable LOS F during the AM and PM peak hours.

Traffic Impact Analysis  
Capital One Building at Schilling Place

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The results of the analysis indicate that the relocation of County employees to the project site would have significant impacts at three of the five study intersections. However, it should be noted that the proposed project involves the reoccupation of existing office and warehouse buildings, and that the anticipated delay and levels of service at the study intersections are similar to the 2008 traffic conditions before the project site was vacated.

In addition, the trip generation methodology adopted for the proposed occupation of the building assumes the land use 1441 Schilling Place to be a government office complex (with a higher trip generation rate) as opposed to a government office building for a more conservative analysis of the project. However, since many of the uses associated with a government office complex will not be located on this site, the actual trips generated at the site could be lower than shown in the analysis. Also, the trips generated by the project site are not anticipated to be net new trips on the road network since the facility had been previously occupied. The relocation of County employees from the downtown to the project site will likely result in relieving traffic congestion in the downtown area.

## 1. Introduction

This report presents the results of the Traffic Impact Analysis conducted by Hatch Mott MacDonald (HMM) to assess the potential traffic impacts associated with the relocation of County of Monterey (County) personnel to two currently vacant buildings located at 1441 and 1488 Schilling Place in the City of Salinas. The structure at 1441 Schilling Place is a two-story, 202,358 square foot office building and the structure at 1488 Schilling Place is a 91,707 square foot manufacturing/warehouse building. The project location is shown on the map in **Exhibit 1**.

## 2. Project Description

The County of Monterey is proposing to relocate County personnel to the two buildings on the project site. Although the number of employees to be relocated to the project site was not available at the time of writing, the County is proposing to use the 202,358 square foot building for office space, and the 91,707 square foot building for warehousing. An aerial photograph of the project site is shown in **Exhibit 2**.

## 3. Background Information

Capital One Financial Corporation previously occupied the project site for general office uses, bill processing, credit card production, and a call center. The call center was in operation 24 hours a day, seven days a week. It is estimated that the site once housed 1,200 employees. The site housed about 850 employees when Capital One closed its doors in mid-2013.

In 2009 HMM completed a traffic study for the Salinas Ag-Industrial Center development, which is about one mile from the proposed Capital One project site. The *Salinas Ag-Industrial Center Traffic Impact Analysis (TIA) Report* analyzed traffic operations at 46 intersections within the City of Salinas and unincorporated areas of Monterey County. The Salinas Ag-Industrial Center project was approved by the Salinas City Council in 2010 but has not been constructed yet.

The County's proposed project site is located within the study area of the Salinas Ag-Industrial Center traffic study. As a result, the intersections likely to be impacted by County personnel relocating to the project site were previously analyzed in the Salinas Ag-Industrial Center 2009 traffic study. At the time the Salinas Ag-Industrial Center traffic study was conducted, the proposed project site was occupied by Capital One. Therefore, the trips generated by Capital One were included in the "Existing Conditions" scenario of the Salinas Ag-Industrial Center traffic study, which is designated "2008 Conditions" in this report.

## 4. Study Scope

The traffic scenarios analyzed for this study include:

1. Existing Conditions<sup>4</sup>
2. Existing Plus Project Conditions<sup>5</sup>
3. General Plan Buildout Conditions<sup>6</sup>

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<sup>4</sup> Based on traffic counts conducted in 2013 and 2014.

<sup>5</sup> 2013 and 2014 traffic volumes plus traffic generated by County employees relocating to Capital One site.

The study intersections analyzed for this study include:

1. Harkins Road / Abbott Street
2. Harkins Road / Hansen Street
3. Airport Boulevard / Hansen Street
4. Airport Boulevard / Terven Avenue
5. S. Sanborn Road – E. Blanco Road / Abbott Street

A map of the study intersections is included in **Exhibit 3**. All study intersections are under the jurisdiction of the City of Salinas with the exception of the Airport Boulevard / Terven Avenue intersection, which is under Caltrans jurisdiction.

## **5. Traffic Operation Evaluation Methodologies and Level of Service Standards**

Intersection traffic operations were evaluated based on the Level of Service (LOS) concept, and the LOS standards adopted by the City of Salinas and Caltrans. LOS is a quantitative description of an intersection's operation, ranging from LOS A to LOS F. Level of service "A" represents free flow uncongested traffic conditions. Level of service "F", which represents highly congested traffic conditions, is commonly considered unacceptable. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes. LOS descriptions for signalized and unsignalized intersections are shown in **Appendix A**.

The Synchro analysis software (Version 8) was used to evaluate intersection traffic operations based on the Highway Capacity Manual (HCM) 2000 methodologies for signalized and unsignalized intersections.

Intersection operations are based upon the average vehicular delay at the intersection. The average delay is then correlated to a level of service. For one-way or two-way stop controlled intersections, the vehicle delay for side street traffic is analyzed. LOS for each side street approach is based on the distribution of gaps in the major street traffic stream and driver judgment in selecting gaps. Improvements are warranted when a side street approach reaches LOS F for one-way or two-way stop controlled intersections. When using the HCM 2000 method for the analysis of signalized and all-way stop controlled intersections, the average overall intersection delay is used to determine LOS. Improvements are warranted when an intersection operates below the LOS standard.

The City of Salinas has established LOS D as the general threshold for acceptable overall traffic operations for both signalized and un-signalized intersections. The Caltrans level of service standard is the transition between LOS C and LOS D.

### **City of Salinas Significance Criteria**

A significant impact at a study intersection is defined to occur under the following conditions:

- The addition of project traffic causes operations to deteriorate from an acceptable level (LOS D or better) to an unacceptable level (LOS E or LOS F), or

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<sup>6</sup> Referenced from the *Salinas Ag-Industrial Center Traffic Impact Analysis Report*, 2009.

- The addition of project traffic adds one vehicle trip to intersections already operating at LOS E or LOS F.

### Caltrans Significance Criteria

A significant impact at a signalized study intersection is defined to occur under the following conditions:

- A significant impact would occur if an intersection operating at LOS A, B or C degrades to D, E or F. For intersections already operating at unacceptable levels D and E, a significant impact would occur if a project adds 0.01 or more during peak hours to the critical movement's volume-to-capacity ratio. If the intersection is already operating at LOS F, any increase (one vehicle) in the critical movement's volume-to-capacity ratio is considered significant.

A significant impact at an unsignalized study intersection is defined to occur under the following conditions:

- Any traffic movement has LOS F or any traffic signal warrant is met.

## 6. Transit Services

Monterey-Salinas Transit (MST) operates numerous bus routes within Monterey County. MST currently operates Bus Route 23 in the vicinity of the project. Bus stops are located on both sides of Abbott Street near the Harkins Road / Abbott Street intersection, approximately one-half mile from the project site.

Bus Route 23 provides weekday service between Hartnell College in Salinas and King City, and weekend service between Northridge Mall in Salinas and King City. The route travels primarily along Abbott Street and Alisal Street in the City of Salinas, with regular stops at the Salinas Transit Center. The route has headways of about 60 minutes on weekdays. On weekends, headways range between 60 minutes and three hours.

## 7. Existing Road Network

The Capital One project site is bounded by Eden Street to the north and east, and Schilling Place to the west and south. Primary regional access to the project site is provided by US 101. Important arterial and collector streets relevant to the Capital One project site include Abbott Street, Harkins Road, Hansen Street, Airport Boulevard, Terven Avenue, Sanborn Road, and Blanco Road. A brief description of the street network follows.

**Abbott Street** is a 4-lane arterial between John Street (SR 68) in central Salinas and Harris Road in southern Salinas. Approximately one half mile south of Harris Road, Abbott Street narrows to three lanes, with one lane in the southbound direction and two lanes in the northbound direction. Abbott Street runs generally parallel to US 101 between Harkins Road and US 101. South of the Salinas City Limits, Abbott Street becomes a rural County road and links with US 101 at the Abbott Street interchange. Only a northbound off-ramp and a southbound on-ramp are provided at this interchange. Abbott Street is part of the assigned City of Salinas truck route between Sanborn Road and Harkins Road.

**Airport Boulevard** is a 2-lane, north-south arterial (with a two-way left-turn lane along portions of it) that widens to four lanes at some locations. Airport Boulevard is part of the assigned City of Salinas truck route between Abbott Street and Skyway Boulevard.

**Blanco Road** is a major arterial with turn channelization at key intersections. It varies between 2 and 4 lanes and is located on the south side of the City of Salinas. Blanco Road turns into South Sanborn Road north of Abbott Street. Blanco Road is part of the assigned City of Salinas truck route between Davis Road and Abbott Street.

**Hansen Street** is a two lane arterial. It serves as a link between the Airport Boulevard interchange and Harkins Road, where it is part of the assigned City of Salinas truck route.

**Harkins Road** is a 2-lane rural County road between the town of Spreckels and the Salinas City Limits. Approximately one-third mile north of the City Limits, it becomes a 4-lane arterial with a two-way left-turn lane and left-turn lanes at key intersections. Harkins Road is part of the assigned City of Salinas truck route between Abbott Street and Hansen Street.

**Sanborn Road** is a four-lane, north-south arterial with turn channelization at key intersections. Sanborn Road begins at the terminus of East Blanco Road, where it intersects with Abbott Street, and continues north through the east side of Salinas, where it terminates at East Boronda Road. Sanborn Road is part of the assigned City of Salinas truck route between Abbott Street and Laurel Drive.

**Terven Avenue** is a two-lane, east-west collector extending from Sanborn Road to Airport Boulevard with a posted speed limit of 25 mph. Its intersections with Sanborn Road and the US 101 southbound ramps are signalized.

**US 101** is a north-south freeway with two mainline lanes in each direction in the project study area. Auxiliary lanes are provided in the northbound and southbound directions between the Sanborn Road and Airport Boulevard interchanges. US 101 has a posted speed limit of 65 mph in the project vicinity.

## 8. Existing Traffic Conditions

This section describes the road network, traffic volumes and intersection levels of service under existing traffic conditions.

The evaluation of intersection operating conditions is based upon the highest one-hour traffic volumes observed during the morning and evening peak commute periods. To establish existing traffic conditions, intersection traffic counts were collected during the weekday AM (i.e. 7:00 – 9:00am) and PM (i.e. 4:00 – 6:00pm) peak periods at the study intersections. The traffic count data is provided in **Appendix B**. The peak one-hour intersection turning movement volumes were identified for each intersection and are presented in **Exhibit 4**.

Intersection traffic counts were conducted in June, 2014, with the exception of the Harkins Road / Hansen Street intersection, which was counted in July, 2013. Traffic volumes were classified as vehicles, trucks, bicycles, and pedestrians.

Intersection levels of service (LOS) for existing traffic conditions are summarized in **Exhibit 5**. LOS calculations are included in **Appendix C**. A brief description of the operating conditions at each study intersection is provided below.

- 1) The signalized Harkins Road / Abbott Street intersection currently operates at an overall LOS D during the AM peak and PM peak hours.
- 2) The signalized Harkins Road / Hansen Street intersection currently operates at an overall LOS C during the AM peak hour and LOS D during the PM peak hour.
- 3) The unsignalized Airport Boulevard / Hansen Street intersection currently operates at an overall LOS A during the AM peak hour and LOS B during the PM peak hour. The worst approach (northbound Airport Boulevard) currently operates at LOS D during the AM peak hour and LOS E during the PM peak hour.
- 4) The signalized Airport Boulevard / Terven Avenue intersection currently operates at an overall LOS E during the AM peak hour and LOS D during the PM peak hour.
- 5) The signalized Sanborn Road-Blanco Road / Abbott Street intersection currently operates at an overall LOS D during the AM and PM peak hours.

**Exhibit 5** also presents, for reference, the 2008 existing conditions levels of services from the *Salinas Ag-Industrial Center Traffic Impact Analysis (TIA) Report*, which was conducted when the Capital One buildings were occupied by Capital One employees. A comparison of the existing traffic volumes at the Harkins Road / Hansen Street intersection (which provides the only access to the project site) between 2008 and 2014 shows a substantial decrease due to the project site being vacated by Capital One. **Exhibit 5** shows that the delay and levels of service at the study intersections are generally better in 2014 than they were in 2008. This is consistent with the vacancy of the Capital One buildings.

## **9. Project Trip Generation, Distribution and Assignment**

Project trip generation was estimated based on trip generation rates published in the Institute of Transportation Engineers' (ITE) Trip Generation handbook, 9th Edition, 2012. The project is estimated to generate 5,976 daily trips, of which 475 will be generated during the AM peak hour (420 in, 55 out) and 606 will be generated during the PM peak hour (186 in, 420 out). The project trip generation estimate is provided in **Exhibit 6**. The trip generation methodology adopted for the proposed occupation of the building assumes the land use at 1441 Schilling Place to be a government office complex. This land use has a higher trip generation rate for the PM peak hour (the PM peak hour experiences worse operational conditions for the study intersections compared to the AM peak) as opposed to a government office building for a more conservative analysis of the project. However, since many of the uses associated with a government office complex will not be located on this site, the actual trips generated at the site could be lower than shown in the analysis. **Exhibit 6** indicates that the trip generation estimate assuming Government Office Building would be less than half the anticipated number of trips using the Government Office Complex rate.

Also, the trips generated by the project site are not anticipated to be net new trips on the road network since the facility had been previously occupied. The project that occupied the site in the early 1990's had 1,075 employees in about 150,000 square feet of building according to the "Household Card Center

Traffic Analysis Report", March 1989 by Higgins Associates (now a part of Hatch Mott MacDonald). That study estimated the site to generate about 3,440 daily trips with 540 during the morning and evening peak hours. The building square footage at that time was only about one half of the current square footage, which will be entirely occupied by Monterey County departments.

The project's trip distribution and assignment were based on existing and historical land use and travel patterns in the study area, and engineering judgment. The project's trip distribution and assignment are presented in **Exhibit 7**.

## 10. Existing Plus Project Conditions

This section describes the road network, traffic volumes and intersection levels of service under Existing Plus Project traffic conditions.

Existing conditions (2014) AM and PM peak hour traffic volumes were combined with the estimated trips generated by the proposed project to obtain Existing Plus Project traffic volumes, which are presented in **Exhibit 8**.

A comparison of the "existing" 2008 traffic volumes at the Harkins Road / Hansen Street intersection (which provides the only access to the project site) with the "Existing Plus Project" traffic volumes indicates the project trip generation estimate is conservatively on the high side. The Capital One site reportedly housed over 1,200 employees at one time. Since it is not known at this time how many County employees will be relocated to the project site, the project trip generation estimate was based on square footage, which could result in an over-estimation of project traffic.

Intersection levels of service for Existing Plus Project traffic conditions are summarized in **Exhibit 5**. LOS calculations are included in **Appendix C**. A brief description of the operating conditions at each study intersection under Existing Plus Project conditions is provided below.

- 1) The signalized Harkins Road / Abbott Street intersection will operate at an overall LOS D during the AM peak and PM peak hours.
- 2) The signalized Harkins Road / Hansen Street intersection will operate at an overall LOS C during the AM peak hour and LOS E during the PM peak hour.
- 3) The unsignalized Airport Boulevard / Hansen Street intersection will operate at an overall LOS A during the AM peak hour and LOS D during the PM peak hour. The worst approach (northbound Airport Boulevard) will operate at LOS E during the AM peak hour and LOS F during the PM peak hour.
- 4) The signalized Airport Boulevard / Terven Avenue intersection will operate at an overall LOS E during the AM peak hour and LOS D during the PM peak hour.
- 5) The signalized Sanborn Road-Blanco Road / Abbott Street intersection will operate at an overall LOS D during the AM and PM peak hours.

## 11. Project Impacts

Project impacts were determined by comparing Existing (2014) traffic operations to Existing (2014) Plus Project traffic operations. Based on the City of Salinas and Caltrans significance criteria, the project will have a significant impact at the following intersections:

- 2) Harkins Road / Hansen Street (City of Salinas intersection) – The addition of project traffic will cause operations at this intersection to deteriorate from an acceptable LOS D during the PM peak hour to an unacceptable LOS E.
- 3) Airport Boulevard / Hansen Street (City of Salinas intersection) – Trips added by the proposed project will cause operations at this intersection to worsen from an unacceptable LOS E during the PM peak hour to an unacceptable LOS F at the worst approach of this intersection during the PM peak hour.
- 4) Airport Boulevard / Terven Avenue (Caltrans intersection) – This intersection currently operates at an unacceptable LOS E during the AM peak hour and unacceptable LOS D during the PM peak hour. The addition of project traffic will add 0.01 or more to the critical movement's volume-to-capacity ratio during the AM and PM peak hours.

## 12. General Plan Buildout Conditions

This section of the report describes intersection levels of service under General Plan Buildout traffic conditions, referenced from the Salinas Ag-Industrial Center Traffic Impact Analysis Report (HMM 2009). This scenario is based on year 2030 traffic volume forecasts based on the Association of Monterey Bay Area Governments (AMBAG) travel demand forecasting model and also includes traffic generated by the buildout of the Salinas Ag-Industrial Center as well as changes to the road network (i.e., interchange improvements at the US 101 / Airport Boulevard and US 101 / Sanborn Road interchanges and construction of the US 101 / Harris Road interchange).

The future US 101 / Harris Road interchange is identified as a major improvement required for the buildout of the Salinas General Plan in the Salinas General Plan Circulation Element (Salinas General Plan Circulation Element improvement #39 on Table C-4 – Roadway network improvements, Page C-25, September 2002). It is also included in the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee Program (last updated in June 2013). The Harris Road interchange could result in a substantial reduction in traffic at the US 101 interchanges with Airport Boulevard and Sanborn Road.

General Plan Buildout Conditions traffic volumes are presented in **Exhibit 9**. Intersection levels of service for General Plan Buildout traffic conditions are summarized in **Exhibit 5**. A brief description of the operating conditions at each study intersection under General Plan Buildout conditions is provided below.

- 1) The Harkins Road / Abbott Street intersection will operate at an unacceptable overall LOS E during the AM peak and PM peak hours.
- 2) The Harkins Road / Hansen Street intersection will operate at an overall LOS D during the AM peak hour and an unacceptable LOS E during the PM peak hour.

- 3) The Airport Boulevard / Hansen Street intersection will operate at an overall LOS A during the AM and PM peak hours. The worst approach (northbound Airport Boulevard) will operate at LOS C during the AM peak hour and LOS E during the PM peak hour.
- 4) The Airport Boulevard / Terven Avenue intersection will operate at an overall LOS D during the AM and PM peak hours.
- 5) The Sanborn Road-Blanco Road / Abbott Street intersection will operate at an overall unacceptable LOS F during the AM and PM peak hours.

### **13. Project Access and Circulation Assessment**

The project site is located in an industrial area of Salinas. Access to the project site from the local street network is provided via Schilling Place. In addition to Schilling Place, Eden Street provides traffic circulation within the project area. Pedestrian crosswalks are provided between the major parking areas and the buildings. Based on the layout of the buildings, parking lots and parking aisles, on-site vehicular and pedestrian circulation appears to be satisfactory for the anticipated use.

The City of Salinas municipal code (Section 37-50.360) for off-street parking requires one parking space per 200 square feet of government office space. This would result in a requirement of 1,012 parking spaces for the 202,358 square feet of government office space at 1441 Schilling Place. The municipal code for industrial land uses is one parking space per 500 square feet plus one parking space per 300 square feet of auxiliary office space. The 91,707 square feet of building space the County would be using for warehousing at 1488 Schilling Place includes approximately 15,000 square feet of auxiliary office space. This would result in a requirement of 203 parking spaces, for a total requirement of 1,215 off-street parking spaces. There are 1,220 parking spaces are provided on the site. Based on the City of Salinas parking requirements for government offices and industrial land uses, the parking supply appears adequate.

### **14. Status of Airport Boulevard and Sanborn Road Interchange Improvements**

Improvements on the east side of the US 101 / Airport Boulevard interchange were completed subsequent to the preparation of the *Salinas Ag-Industrial Center Traffic Impact Analysis Report* (HMM 2009). These improvements included new northbound on and off-ramps, a new traffic signal at the Airport Boulevard / De La Torre Street intersection, and the widening of the bridge over US 101. Originally, improvements were also planned for the west side of the freeway. However, Caltrans has indicated that the improvements on the east side of the interchange resolved most of the deficiencies at this interchange and the second phase of the improvements are no longer being considered.

Planned improvements at the US 101 / Sanborn Road interchange have been separated into two projects. One part of the project includes restricting access to the Sanborn Road / Elvee Drive intersection to right turns in and out only, and removing the intersection from operating with the signal at Sanborn Road and the US 101 southbound ramps. An extension of Elvee Drive to Work Street will also be implemented to augment access to businesses on Elvee Drive. These measures would improve operations of the southbound ramps intersection with Sanborn Road to acceptable conditions.

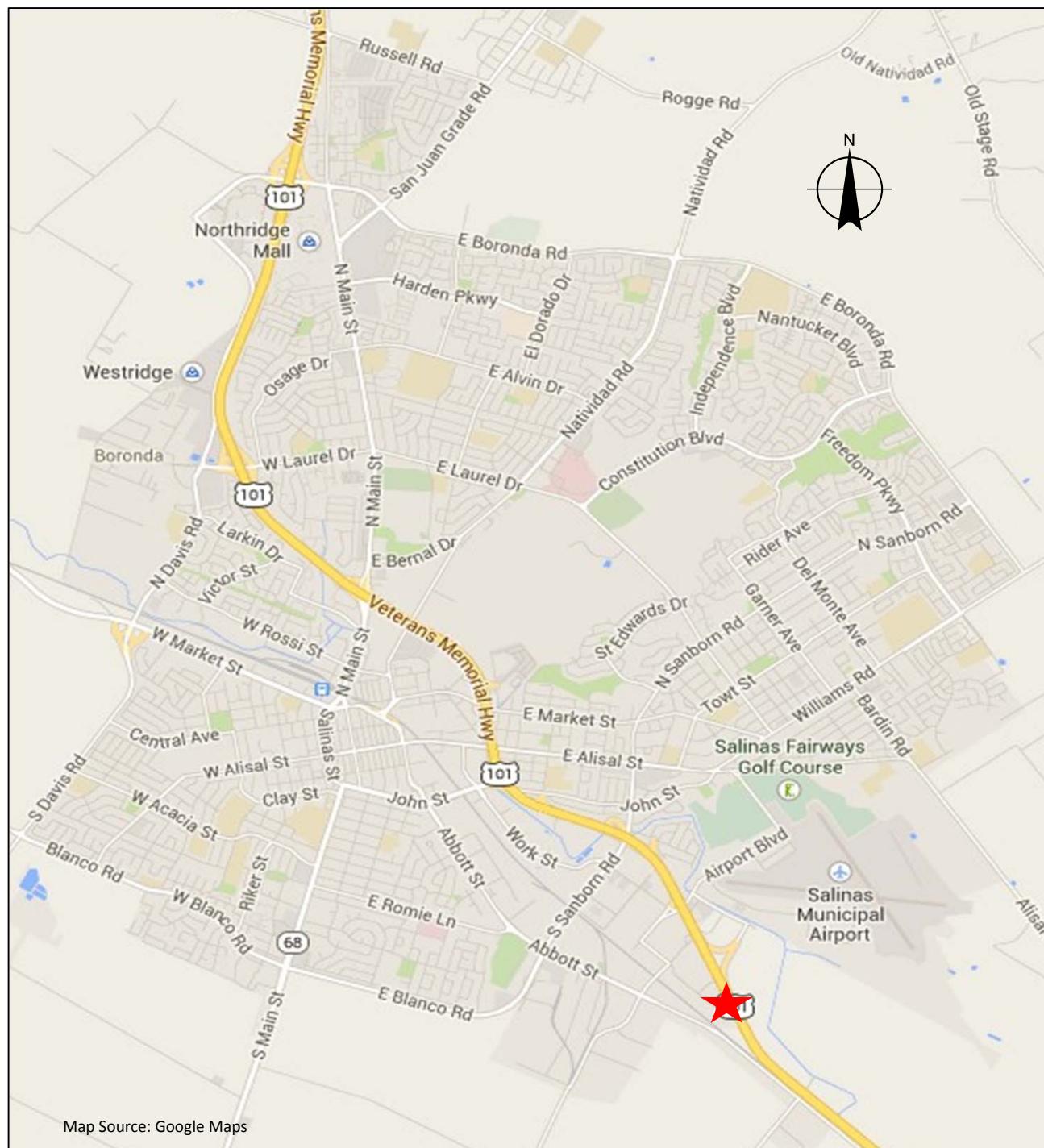
Other planned improvements at the Sanborn Road / Fairview Road intersection include signalization of the Fairview Road / US 101 Northbound Off-Ramp-Sanborn Road intersection, including coordination with the existing signal at the US 101 southbound ramps.

The anticipated completion date for both sets of improvements at the US 101/Sanborn Road interchange is December 2015.

## **15. Conclusions**

The results of the analysis indicate that the relocation of County employees to the project site would have significant impacts at three of the five study intersections. However, it should be noted that the proposed project involves the reoccupation of existing office and warehouse buildings, and that the anticipated delay and levels of service at the study intersections are similar to the 2008 traffic conditions before the project site was vacated.

In addition, the trip generation methodology adopted for the proposed occupation of the building assumes the land use 1441 Schilling Place to be a government office complex (with a higher trip generation rate) as opposed to a government office building for a more conservative analysis of the project. However, since many of the uses associated with a government office complex will not be located on this site, the actual trips generated at the site could be lower than shown in the analysis. Also, the trips generated by the project site are not anticipated to be net new trips on the road network since the facility had been previously occupied. The relocation of County employees from the downtown to the project site will likely result in relieving traffic congestion in the downtown area.



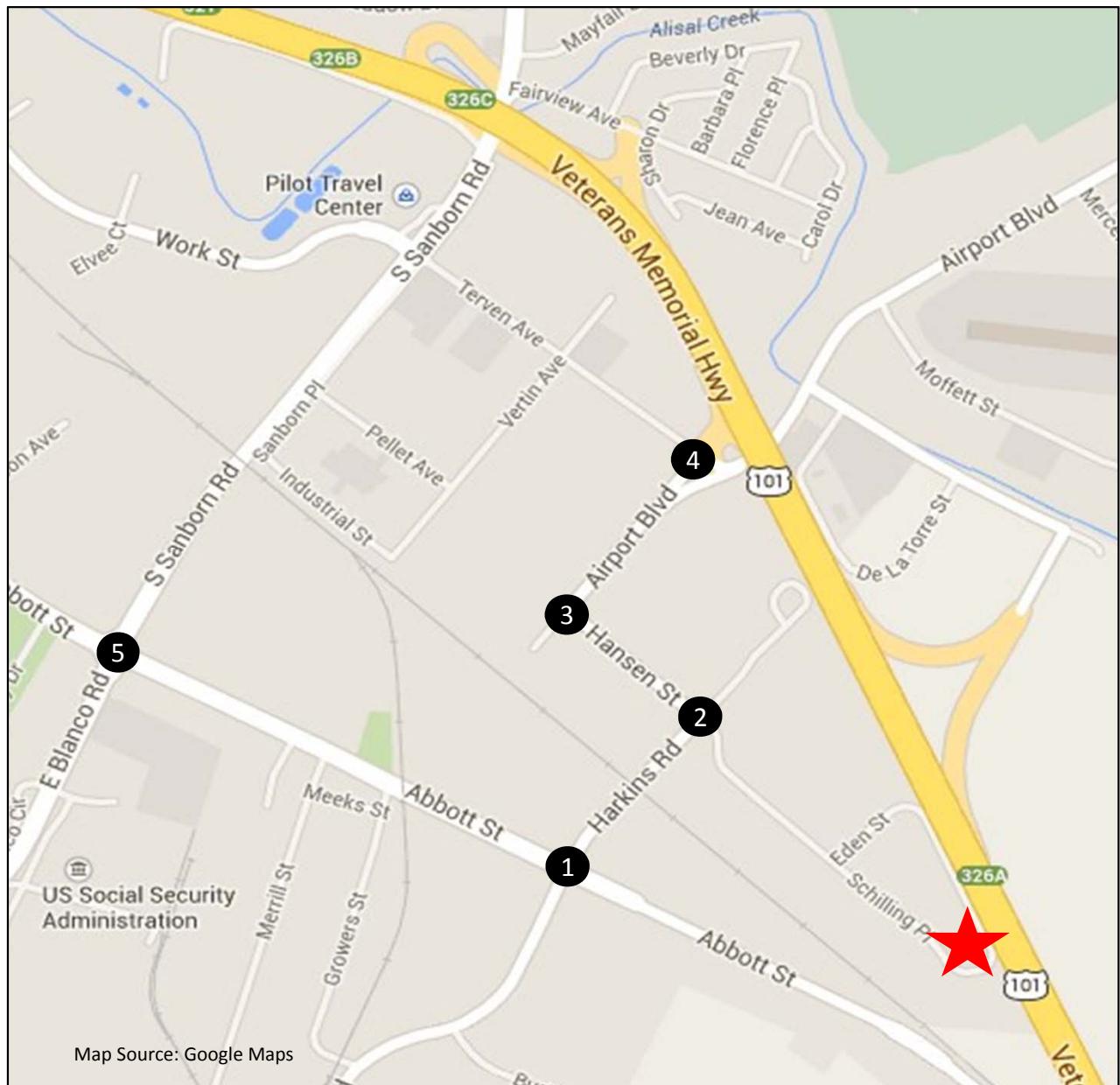
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Project Location

Exhibit 1  
Project Location Map

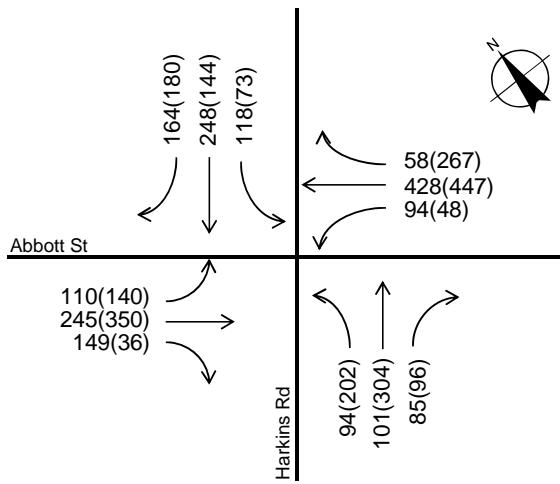




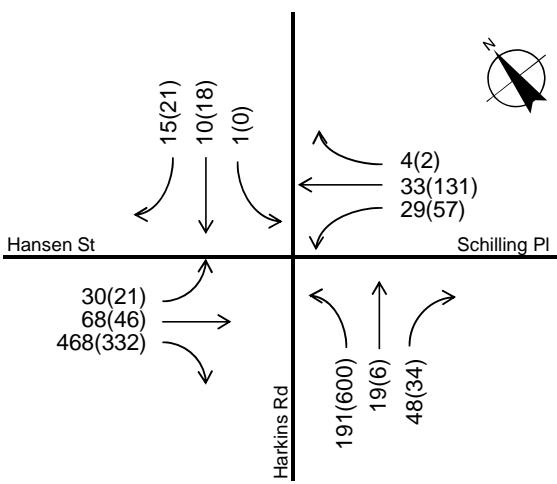
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|  | Project Site       |
|  | Study Intersection |

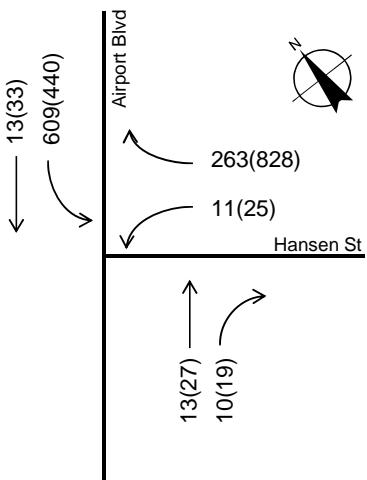
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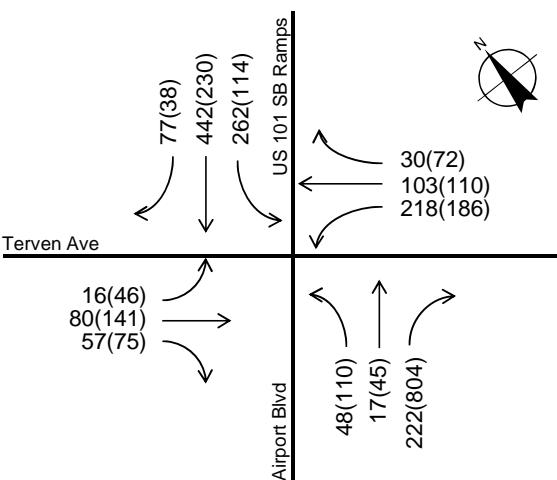
### 2. Harkins Rd / Hansen St



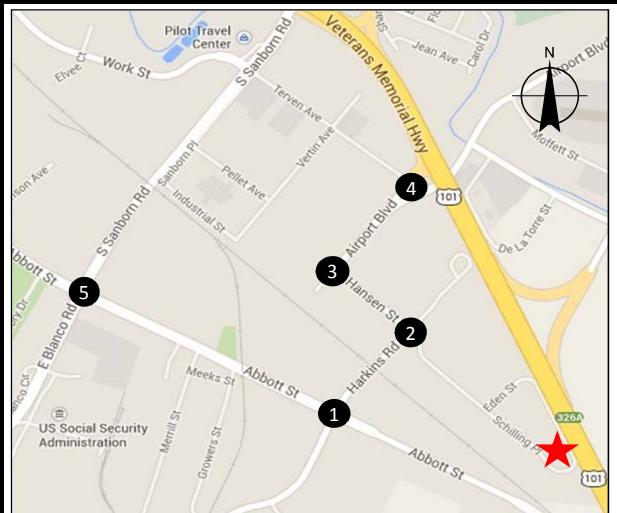
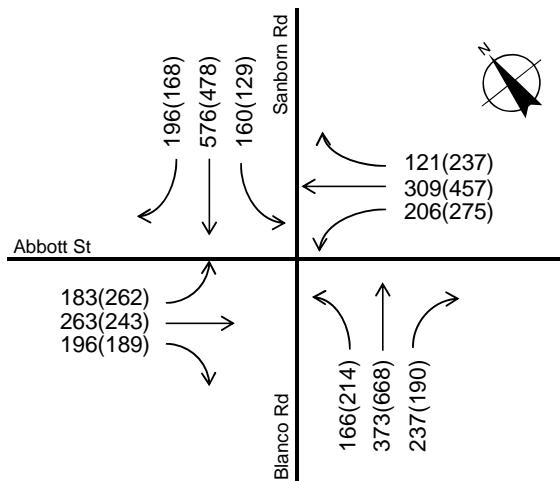
### 3. Airport Blvd / Hansen St



### 4. Airport Blvd / Terven Ave



### 5. Sanborn Rd-Blanco Rd / Abbott St



XX (YY) = AM (PM)

Exhibit 4

Existing Conditions

AM & PM Peak Hour Volumes

	N-S Street	E-W Street	Existing Operational Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions		Existing Conditions		Existing + Project Conditions		General Plan Buildout Conditions							
						2008		2014		AM Peak Hr		PM Peak Hr							
						AM Peak Hr Delay (sec)	PM Peak Hr LOS (sec)	AM Peak Hr Delay (sec)	PM Peak Hr LOS (sec)	AM Peak Hr Delay (sec)	PM Peak Hr LOS (sec)	AM Peak Hr Delay (sec)	PM Peak Hr LOS (sec)						
1	Harkins Road	Abbott Street	NB 1-L, 2-T, 1-R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T, 1-T/R WB 1-L, 2-T, 1-R	Signal	D	59.7 50.1	E D	41.0 55.0	D D	36.1 45.4	D D	41.4 32.7	D C	43.0 65.6	D E	67.6 42.4	E D	59.7 55.6	E E
2	Harkins Road	Hansen Street	NB 1-L/T, 1-R SB 1-L/T, 1-R EB 1-L/T, 1-T, 1-R WB 1-L, 1-T/R	Signal	D	41.0 55.0	D D	33.2 45.4	C D	32.7 41.4	C D	65.6 43.0	E D	42.4 43.0	D D	55.6 59.7	E E		
3	Airport Boulevard	Hansen Street	NB 1-T/R SB 2-L, 1-T WB 1-L, 1-R	Stop Sign (NB & WB)	D	0.3 21.9	A C	0.7 35.5	A E	9.4 49.1	A B	10.3 40.0	B E	12.2 288.0	B F	0.4 0.4	A C	0.8 24.1	A E
4	Airport Boulevard	Terven Avenue	NB 1-L, 1-T, 1-R SB 1-L, 1-T, 1-T/R EB 1-L/T/R WB 1-L/T, 1-R	Signal	C/D	61.4 54.4	E D	57.2 38.7	E D	78.9 44.5	E D	44.5 45.1	D D	52.5 45.1	D D	44.2 91.1	D F	44.2 135.4	D F
5	Sanborn-Blanco Road	Abbott Street	NB 1-L, 2-T, 1-R SB 1-L, 2-T, 1-R EB 1-L, 1-L/T, 1-T, 1-R WB 1-L, 1-L/T, 1-T, 1-R	Signal	D	66.0 77.8	E E	43.3 43.9	D D	39.7 45.1	D D	91.1 45.1	F D						

NOTES:

1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. Analysis performed using 2000 *Highway Capacity Manual* Methodologies
4. Project impacts are indicated with **BOLD** type.
5. Existing Conditions 2008 levels of service represent operating conditions at the study intersections when the Capital One buildings were occupied by Capital One employees.
6. Existing Conditions 2014 levels of service represent operating conditions at the study intersections with the Capital One buildings vacant.

**Monterey County Capital One Building Traffic Impact Analysis, Salinas, CA**  
**Project Trip Generation**

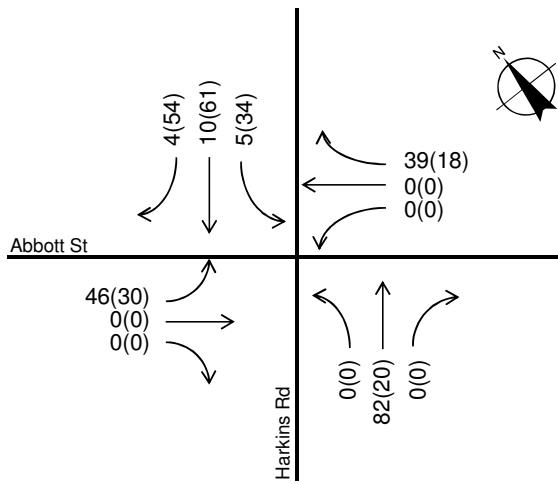
TRIP GENERATION RATES	ITE LAND USE CODE	DAILY TRIP RATE	AM PEAK HOUR				PM PEAK HOUR					
			PEAK HOUR RATE	% OF ADT	% IN	% OUT	PEAK HOUR RATE	% OF ADT	% IN	% OUT		
<b>1441 Schilling Place</b>			733	27.92	2.21	8%	89%	11%	2.85	10%	31%	69%
Government Office Complex (per 1,000 SF) <sup>1</sup>			730	68.93	5.88	9%	84%	16%	1.21	2%	31%	69%
<b>1448 Schilling Place</b>												
Warehousing (per 1,000 SF) <sup>1</sup>		150	3.56	0.30	8%	79%	21%	0.32	9%	25%	75%	
PROPOSED USE	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR					
			PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT	PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT		
Government Office Complex	202,358 SF	5,650	447	8%	398	49	577	10%	179	398		
Government Office Building	202,358 SF	13,949	1190	9%	1000	190	245	2%	76	169		
Warehousing	91,707 SF	326	28	9%	22	6	29	9%	7	22		
<b>TOTAL LAND USE TRIP GENERATION (Government Office Complex)</b>		<b>5,976</b>	<b>475</b>		<b>420</b>	<b>55</b>	<b>606</b>		<b>186</b>	<b>420</b>		
<b>TOTAL LAND USE TRIP GENERATION (Government Office Building)</b>		14,275	1,218		1,022	196	274		83	191		

Notes:

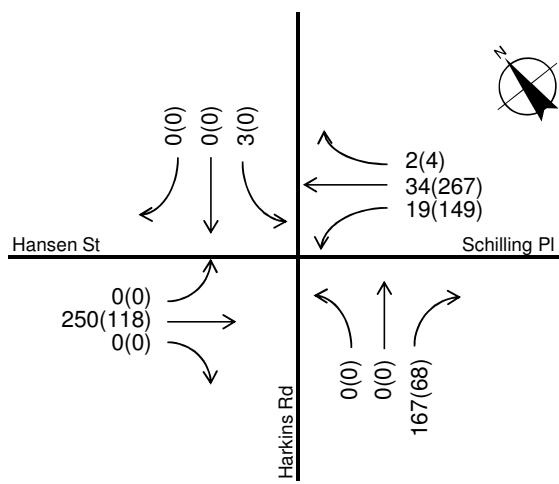
1. Trip generation rates published by Institute of Transportation Engineers (ITE) "Trip Generation Manual," 9th Edition, 2012.

**Exhibit 6**

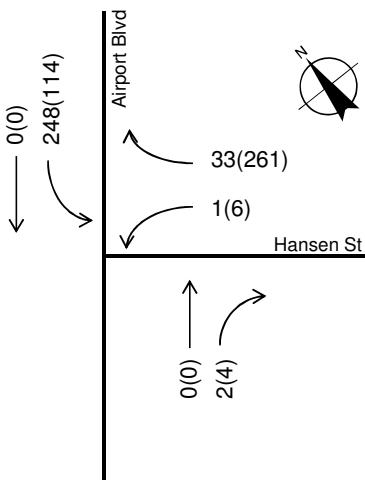
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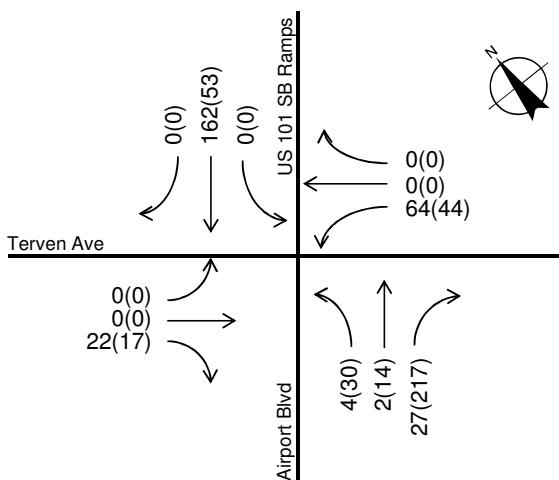
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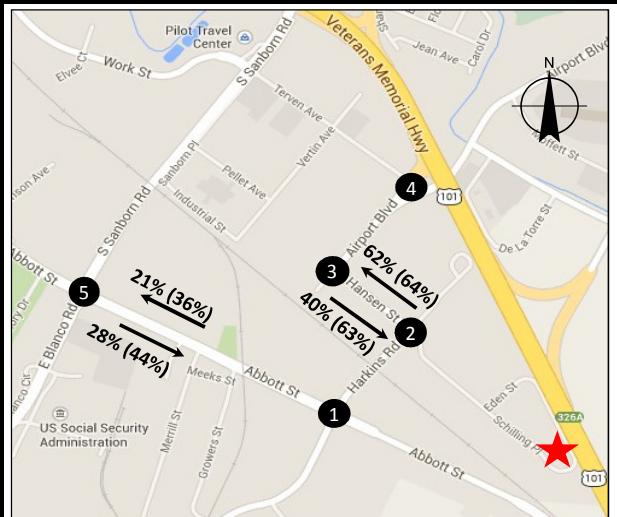
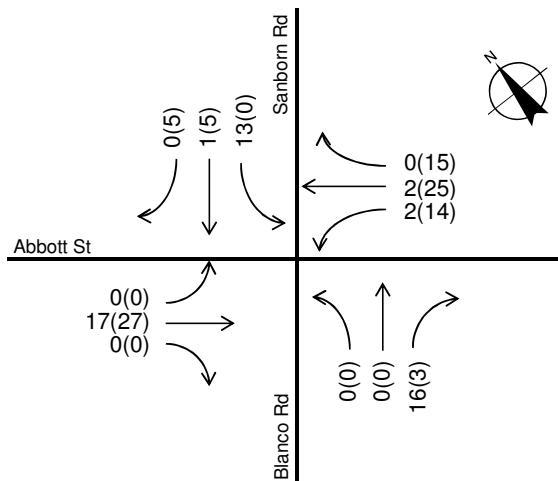
### 3. Airport Blvd / Hansen St



### 4. Airport Blvd / Terven Ave



### 5. Sanborn Rd-Blanco Rd / Abbott St

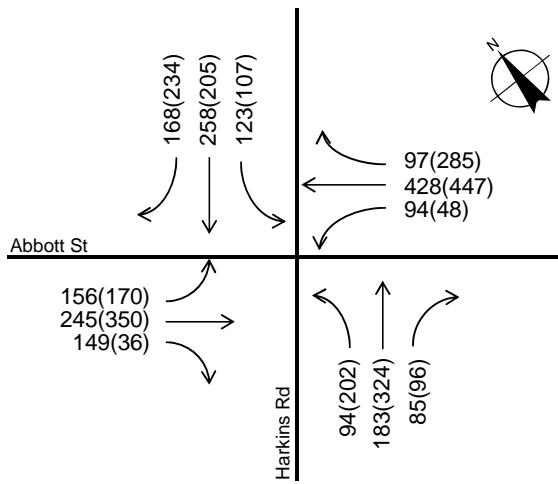


XX (YY) = AM (PM)

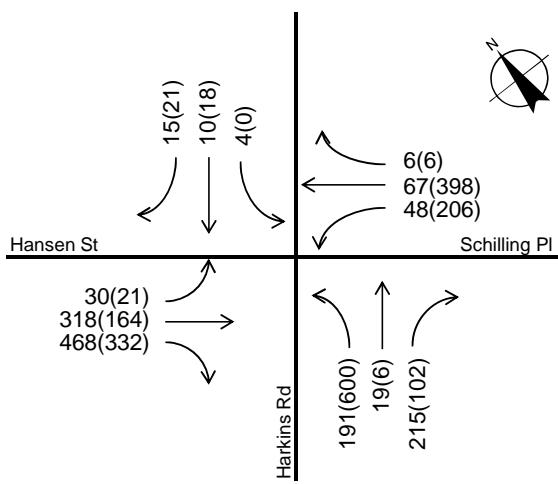
## Exhibit 7

### Project Trip Assignment AM & PM Peak Hour Volumes

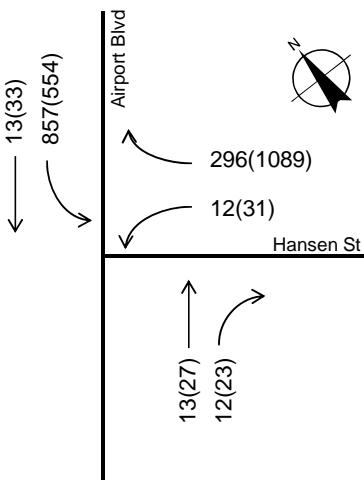
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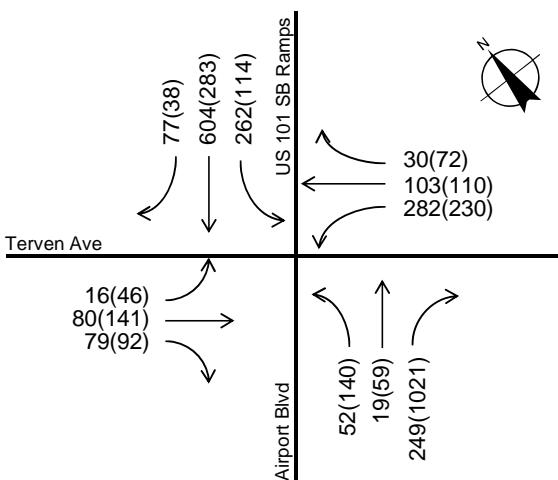
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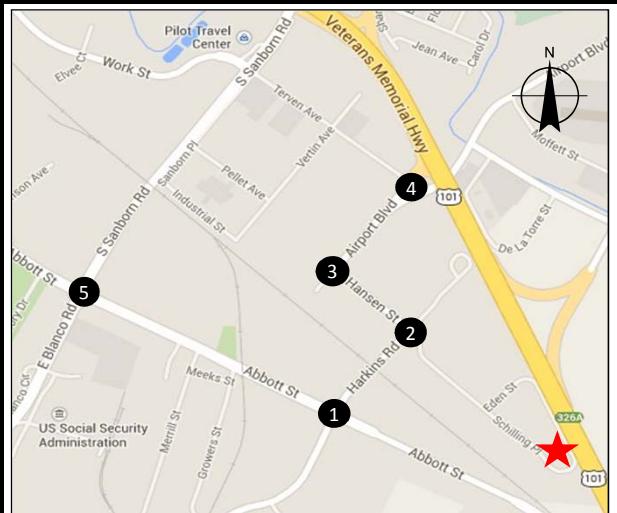
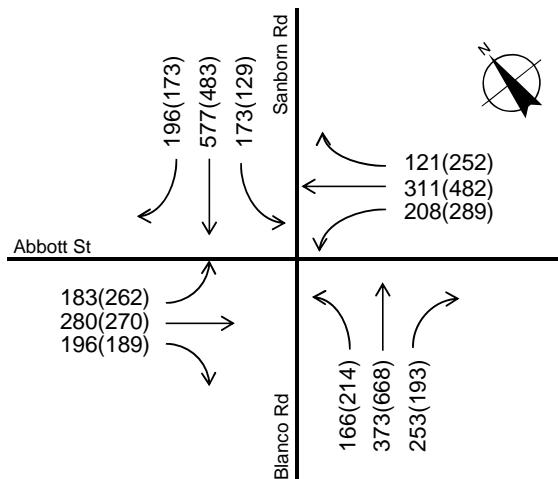
### 3. Airport Blvd / Hansen St



### 4. Airport Blvd / Terven Ave



### 5. Sanborn Rd-Blanco Rd / Abbott St

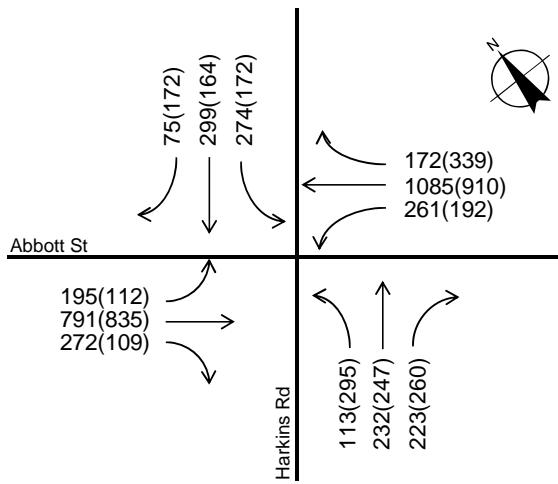


XX (YY) = AM (PM)

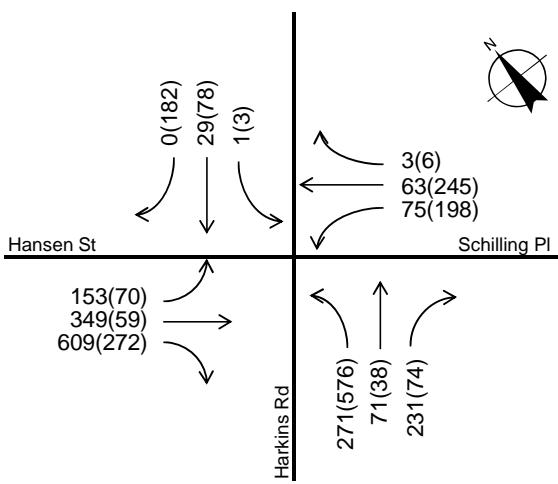
Exhibit 8

Existing + Project Conditions  
AM & PM Peak Hour Volumes

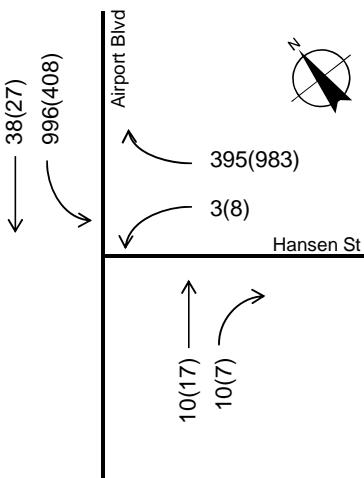
### 1. Harkins Rd / Abbott St



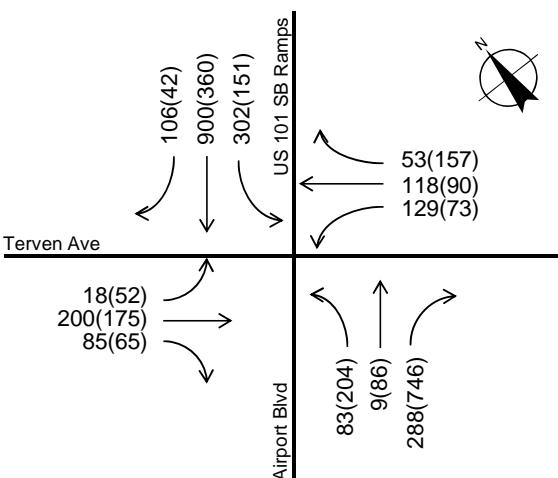
### 2. Harkins Rd / Hansen St



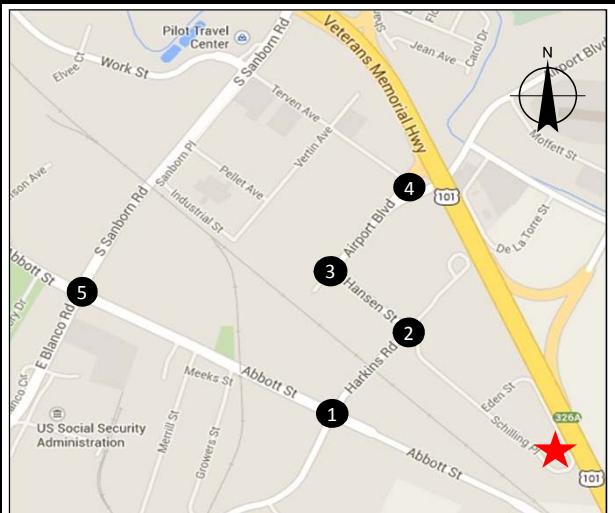
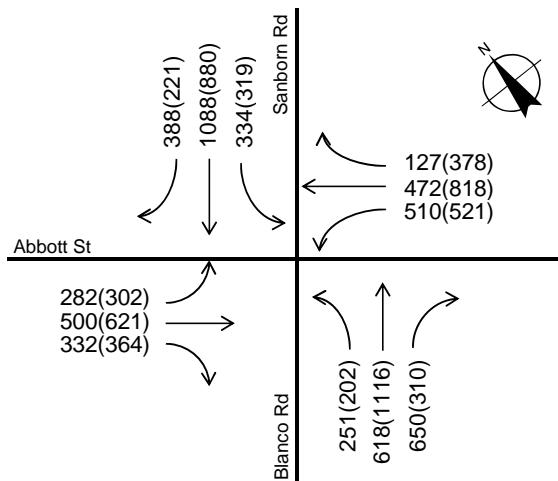
### 3. Airport Blvd / Hansen St



### 4. Airport Blvd / Terven Ave



### 5. Sanborn Rd-Blanco Rd / Abbott St



XX (YY) = AM (PM)

Exhibit 9

General Plan Buildout Conditions  
AM & PM Peak Hour Volumes

## **Appendix A**

## **LEVEL OF SERVICE (LOS) DESCRIPTION SIGNALIZED INTERSECTIONS**

The capacity of an urban street is related primarily to the signal timing and the geometric characteristics of the facility as well as to the composition of traffic on the facility. Geometrics are a fixed characteristic of a facility. Thus, while traffic composition may vary somewhat over time, the capacity of a facility is generally a stable value that can be significantly improved only by initiating geometric improvements. A traffic signal essentially allocates time among conflicting traffic movements that seek to use the same space. The way in which time is allocated significantly affects the operation and the capacity of the intersection and its approaches.

The methodology for signalized intersection is designed to consider individual intersection approaches and individual lane groups within approaches. A lane group consists of one or more lanes on an intersection approach. The outputs from application of the method described in the HCM 2000 are reported on the basis of each lane. For a given lane group at a signalized intersection, three indications are displayed: green, yellow and red. The red indication may include a short period during which all indications are red, referred to as an all-red interval and the yellow indication forms the change and clearance interval between two green phases.

The methodology for analyzing the capacity and level of service must consider a wide variety of prevailing conditions, including the amount and distribution of traffic movements, traffic composition, geometric characteristics, and details of intersection signalization. The methodology addresses the capacity, LOS, and other performance measures for lane groups and the intersection approaches and the LOS for the intersection as a whole.

Capacity is evaluated in terms of the ratio of demand flow rate to capacity (v/c ratio), whereas LOS is evaluated on the basis of control delay per vehicle (in seconds per vehicle). The methodology does not take into account the potential impact of downstream congestion on intersection operation, nor does the methodology detect and adjust for the impacts of turn-pocket overflows on through traffic and intersection operation.

### **LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS** (Reference Highway Capacity Manual 2000)

<b>Level of Service</b>	<b>Control Delay (seconds / vehicle)</b>
<b>A</b>	<b>&lt;10</b>
<b>B</b>	<b>&gt;10 - 20</b>
<b>C</b>	<b>&gt;20 - 35</b>
<b>D</b>	<b>&gt;35 - 55</b>
<b>E</b>	<b>&gt;55 - 80</b>
<b>F</b>	<b>&gt;80</b>

## **LEVEL OF SERVICE (LOS) DESCRIPTION UNSIGNALIZED INTERSECTIONS WITH TWO-WAY STOP CONTROL (TWSC)**

TWSC intersections are widely used and stop signs are used to control vehicle movements at such intersections. At TWSC intersections, the stop-controlled approaches are referred to as the minor street approaches; they can be either public streets or private driveways. The intersection approaches that are not controlled by stop signs are referred to as the major street approaches. A three-leg intersection is considered to be a standard type of TWSC intersection if the single minor street approach (i.e. the stem of the T configuration) is controlled by a stop sign. Three-leg intersections where two of the three approaches are controlled by stop signs are a special form of unsignalized intersection control.

At TWSC intersections, drivers on the controlled approaches are required to select gaps in the major street flow through which to execute crossing or turning maneuvers on the basis of judgement. In the presence of a queue, each driver on the controlled approach must use some time to move into the front-of-queue position and prepare to evaluate gaps in the major street flow. Capacity analysis at TWSC intersections depends on a clear description and understanding of the interaction of drivers on the minor or stop-controlled approach with drivers on the major street. Both gap acceptance and empirical models have been developed to describe this interaction.

Thus, the capacity of the controlled legs is based on three factors:

- the distribution of gaps in the major street traffic stream,;
- driver judgement in selecting gaps through which to execute the desired maneuvers; and
- the follow-up time required by each driver in a queue.

The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, in the absence of incident, control, traffic or geometric delay. Average control delay for any particular minor movement is a function of the capacity of the approach and the degree of saturation and referred to as level of service.

### **LEVEL OF SERVICE (LOS) CRITERIA FOR TWSC INTERSECTIONS** (Reference Highway Capacity Manual 2000)

<b>Level of Service</b>	<b>Control Delay (seconds / vehicle)</b>
<b>A</b>	<b>0 - 10</b>
<b>B</b>	<b>&gt;10 - 15</b>
<b>C</b>	<b>&gt;15 - 25</b>
<b>D</b>	<b>&gt;25 - 35</b>
<b>E</b>	<b>&gt;35 - 50</b>
<b>F</b>	<b>&gt;50</b>

## **Appendix B**

# Traffic Data Service

Campbell, CA  
**(408) 377-2988**  
**tdsbay@cs.com**

File Name : 1AM FINAL  
Site Code : 00000001  
Start Date : 6/18/2014  
Page No : 1

## Groups Printed- Vehicles

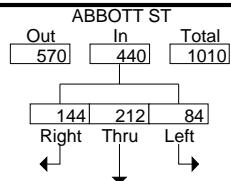
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07:00 AM	21	31	10	0	62	32	47	20	0	99	8	57	17	0	82	5	17	6	0	28	271
07:15 AM	24	38	14	0	76	16	45	21	0	82	10	67	16	0	93	15	11	13	0	39	290
07:30 AM	36	50	19	0	105	37	56	15	0	108	14	93	7	0	114	9	20	12	0	41	368
07:45 AM	51	77	26	0	154	38	89	45	0	172	7	133	27	0	167	27	22	18	0	67	560
Total	132	196	69	0	397	123	237	101	0	461	39	350	67	0	456	56	70	49	0	175	1489
08:00 AM	33	47	25	0	105	27	50	22	0	99	7	94	23	0	124	13	16	22	0	51	379
08:15 AM	19	46	22	0	87	19	32	11	0	62	6	60	11	0	77	12	20	21	0	53	279
08:30 AM	28	44	15	0	87	19	32	21	0	72	5	77	10	0	92	5	16	28	0	49	300
08:45 AM	27	51	19	0	97	14	35	8	0	57	9	69	6	0	84	6	13	25	0	44	282
Total	107	188	81	0	376	79	149	62	0	290	27	300	50	0	377	36	65	96	0	197	1240
Grand Total	239	384	150	0	773	202	386	163	0	751	66	650	117	0	833	92	135	145	0	372	2729
Apprch %	30.9	49.7	19.4	0		26.9	51.4	21.7	0		7.9	78	14	0		24.7	36.3	39	0		
Total %	8.8	14.1	5.5	0	28.3	7.4	14.1	6	0	27.5	2.4	23.8	4.3	0	30.5	3.4	4.9	5.3	0	13.6	

Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	24	38	14	76		16	45	21	82		10	67	16	93		15	11	13	39		290
07:30 AM	36	50	19	105		37	56	15	108		14	93	7	114		9	20	12	41		368
07:45 AM	51	77	26	154		38	89	45	172		7	133	27	167		27	22	18	67		560
08:00 AM	33	47	25	105		27	50	22	99		7	94	23	124		13	16	22	51		379
Total Volume	144	212	84	440		118	240	103	461		38	387	73	498		64	69	65	198		1597
% App. Total	32.7	48.2	19.1			25.6	52.1	22.3			7.6	77.7	14.7			32.3	34.8	32.8			
PHF	.706	.688	.808	.714		.776	.674	.572	.670		.679	.727	.676	.746		.593	.784	.739	.739		.713

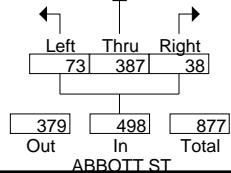
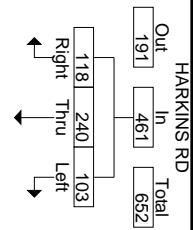
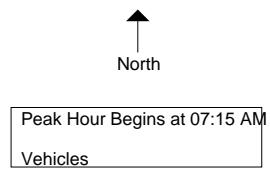
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1AM FINAL  
Site Code : 00000001  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1AM FINAL  
 Site Code : 00000001  
 Start Date : 6/18/2014  
 Page No : 1

Groups Printed- Bikes

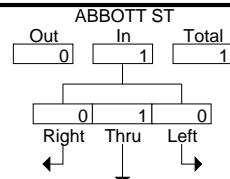
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07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	1	1	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Apprch %	0	50	50	0		0	100	0	0		0	0	0	0	0	0	0	0	0	0	
Total %	0	25	25	0	50	0	50	0	0	50	0	0	0	0	0	0	0	0	0	0	

Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
07:15 AM	0	1	0	1		0	0	0	0		0	0	0	0		0	0	0	0		1
07:30 AM	0	0	0	0		0	1	0	1		0	0	0	0		0	0	0	0		1
07:45 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total Volume	0	1	0	1		0	1	0	1		0	0	0	0		0	0	0	0		2
% App. Total	0	100	0			0	100	0			0	0	0	0		0	0	0	0		
PHF	.000	.250	.000	.250		.000	.250	.000	.250		.000	.000	.000	.000		.000	.000	.000	.000		.500

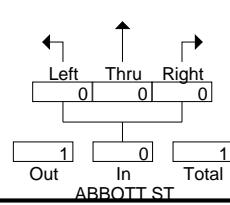
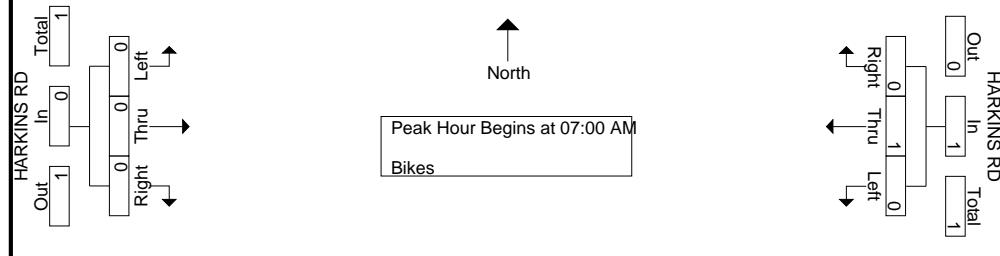
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Page No : 2



## Peak Hour Data

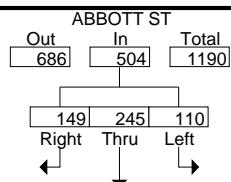




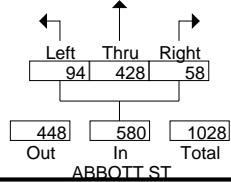
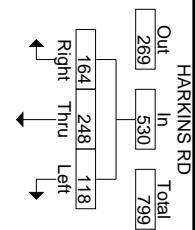
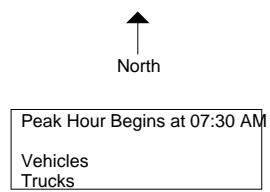
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1AM FINAL  
Site Code : 00000001  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1AM FINAL  
 Site Code : 00000001  
 Start Date : 6/18/2014  
 Page No : 1

## Groups Printed- Trucks

Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	2	3	0	5	6	2	15	0	23	2	11	4	0	17	4	2	1	0	7	52
07:15 AM	1	5	3	0	9	8	8	11	0	27	2	6	5	0	13	10	4	4	0	18	67
07:30 AM	4	2	2	0	8	12	2	11	0	25	3	16	4	0	23	6	6	4	0	16	72
07:45 AM	1	6	3	0	10	10	5	3	0	18	7	14	6	0	27	5	2	5	0	12	67
Total	6	15	11	0	32	36	17	40	0	93	14	47	19	0	80	25	14	14	0	53	258
08:00 AM	2	11	6	0	19	10	4	6	0	20	5	10	9	0	24	7	8	5	0	20	83
08:15 AM	3	6	7	0	16	11	10	5	0	26	9	8	7	0	24	6	7	7	0	20	86
08:30 AM	0	5	4	0	9	5	4	4	0	13	6	15	6	0	27	9	5	10	0	24	73
08:45 AM	0	4	8	0	12	7	6	6	0	19	10	10	3	0	23	7	6	6	0	19	73
Total	5	26	25	0	56	33	24	21	0	78	30	43	25	0	98	29	26	28	0	83	315
Grand Total	11	41	36	0	88	69	41	61	0	171	44	90	44	0	178	54	40	42	0	136	573
Apprch %	12.5	46.6	40.9	0		40.4	24	35.7	0		24.7	50.6	24.7	0		39.7	29.4	30.9	0		
Total %	1.9	7.2	6.3	0	15.4	12	7.2	10.6	0	29.8	7.7	15.7	7.7	0	31.1	9.4	7	7.3	0	23.7	

Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	2	11	6	19		10	4	6	20		5	10	9	24		7	8	5	20		83
08:15 AM	3	6	7	16		11	10	5	26		9	8	7	24		6	7	7	20		86
08:30 AM	0	5	4	9		5	4	4	13		6	15	6	27		9	5	10	24		73
08:45 AM	0	4	8	12		7	6	6	19		10	10	3	23		7	6	6	19		73
Total Volume	5	26	25	56		33	24	21	78		30	43	25	98		29	26	28	83		315
% App. Total	8.9	46.4	44.6			42.3	30.8	26.9			30.6	43.9	25.5			34.9	31.3	33.7			
PHF	.417	.591	.781	.737		.750	.600	.875	.750		.750	.717	.694	.907		.806	.813	.700	.865		.916

# Traffic Data Service

Campbell, CA

(408) 377-2988

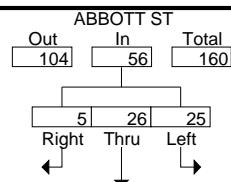
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1AM FINAL

Site Code : 00000001

Start Date : 6/18/2014

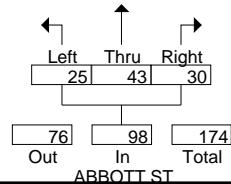
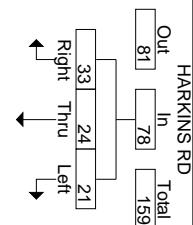
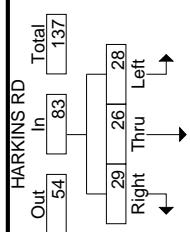
Page No : 2



## Peak Hour Data

North

Peak Hour Begins at 08:00 AM  
Trucks



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1PM FINAL  
 Site Code : 00000001  
 Start Date : 6/18/2014  
 Page No : 1

## Groups Printed- Vehicles

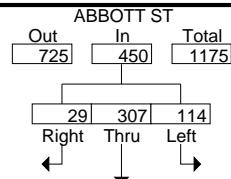
Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	17	81	30	1	129	43	23	5	0	71	26	81	12	1	120	25	64	50	0	139	459
04:15 PM	8	69	29	0	106	49	34	11	0	94	28	92	8	0	128	20	61	47	0	128	456
04:30 PM	11	69	29	0	109	31	18	8	0	57	90	113	11	0	214	21	60	48	0	129	509
04:45 PM	6	69	31	0	106	36	39	12	0	87	49	95	9	0	153	24	55	28	0	107	453
Total	42	288	119	1	450	159	114	36	0	309	193	381	40	1	615	90	240	173	0	503	1877
05:00 PM	4	100	25	0	129	34	27	7	0	68	76	101	8	0	185	15	103	51	0	169	551
05:15 PM	2	83	25	0	110	34	22	5	0	61	39	57	8	0	104	16	55	37	0	108	383
05:30 PM	0	59	19	0	78	17	39	2	0	58	37	49	3	0	89	12	51	19	0	82	307
05:45 PM	0	65	13	0	78	13	27	6	0	46	33	47	2	0	82	7	40	30	0	77	283
Total	6	307	82	0	395	98	115	20	0	233	185	254	21	0	460	50	249	137	0	436	1524
Grand Total	48	595	201	1	845	257	229	56	0	542	378	635	61	1	1075	140	489	310	0	939	3401
Apprch %	5.7	70.4	23.8	0.1		47.4	42.3	10.3	0		35.2	59.1	5.7	0.1		14.9	52.1	33	0		
Total %	1.4	17.5	5.9	0	24.8	7.6	6.7	1.6	0	15.9	11.1	18.7	1.8	0	31.6	4.1	14.4	9.1	0	27.6	

Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	8	69	29	106		49	34	11	94		28	92	8	128		20	61	47	128		456
04:30 PM	11	69	29	109		31	18	8	57		90	113	11	214		21	60	48	129		509
04:45 PM	6	69	31	106		36	39	12	87		49	95	9	153		24	55	28	107		453
05:00 PM	4	100	25	129		34	27	7	68		76	101	8	185		15	103	51	169		551
Total Volume	29	307	114	450		150	118	38	306		243	401	36	680		80	279	174	533		1969
% App. Total	6.4	68.2	25.3			49	38.6	12.4			35.7	59	5.3			15	52.3	32.6			
PHF	.659	.768	.919	.872		.765	.756	.792	.814		.675	.887	.818	.794		.833	.677	.853	.788		.893

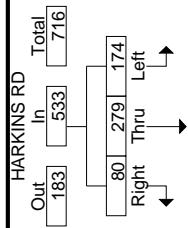
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

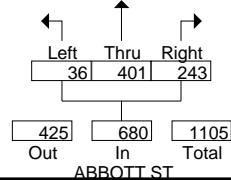
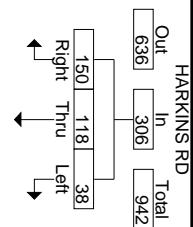
File Name : 1PM FINAL  
Site Code : 00000001  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:15 PM  
Vehicles



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1PM FINAL  
 Site Code : 00000001  
 Start Date : 6/18/2014  
 Page No : 1

Groups Printed- Bikes

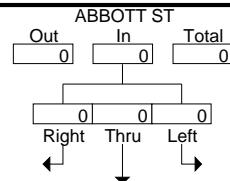
Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0

Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250	.250

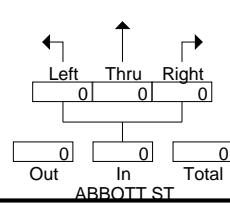
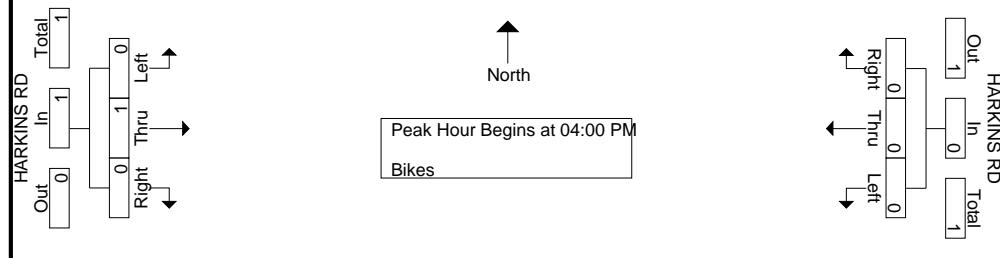
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1PM FINAL  
Site Code : 00000001  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data

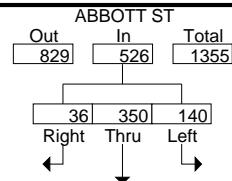




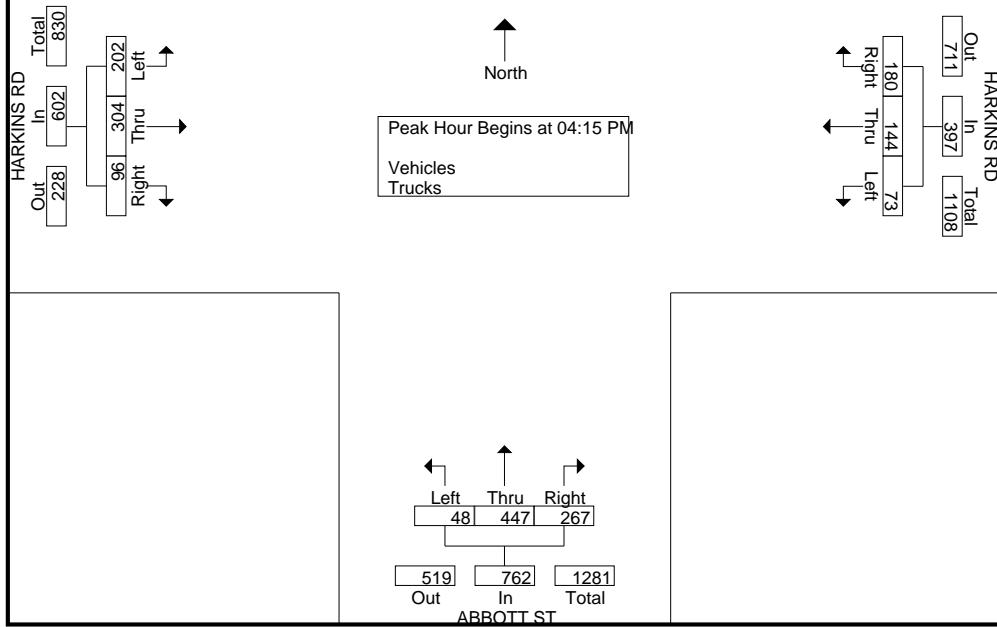
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1PM FINAL  
Site Code : 00000001  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 1PM FINAL  
 Site Code : 00000001  
 Start Date : 6/18/2014  
 Page No : 1

## Groups Printed- Trucks

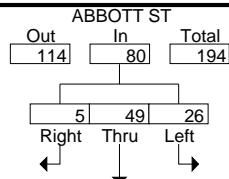
Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	13	4	0	18	12	7	2	0	21	8	12	4	0	24	7	6	10	0	23	86
04:15 PM	2	11	11	0	24	6	7	9	0	22	4	10	2	0	16	10	6	5	0	21	83
04:30 PM	1	13	8	0	22	9	4	16	0	29	9	11	2	0	22	2	7	8	0	17	90
04:45 PM	1	12	3	0	16	11	10	3	0	24	5	12	4	0	21	3	6	8	0	17	78
Total	5	49	26	0	80	38	28	30	0	96	26	45	12	0	83	22	25	31	0	78	337
05:00 PM	3	7	4	0	14	4	5	7	0	16	6	13	4	0	23	1	6	7	0	14	67
05:15 PM	1	12	7	0	20	9	5	4	0	18	5	23	3	0	31	5	6	5	0	16	85
05:30 PM	2	6	4	0	12	9	8	8	0	25	10	9	1	0	20	3	6	4	0	13	70
05:45 PM	2	12	6	0	20	5	2	6	0	13	3	5	3	0	11	3	2	3	0	8	52
Total	8	37	21	0	66	27	20	25	0	72	24	50	11	0	85	12	20	19	0	51	274
Grand Total	13	86	47	0	146	65	48	55	0	168	50	95	23	0	168	34	45	50	0	129	611
Apprch %	8.9	58.9	32.2	0		38.7	28.6	32.7	0		29.8	56.5	13.7	0		26.4	34.9	38.8	0		
Total %	2.1	14.1	7.7	0	23.9	10.6	7.9	9	0	27.5	8.2	15.5	3.8	0	27.5	5.6	7.4	8.2	0	21.1	

Start Time	ABBOTT ST Southbound					HARKINS RD Westbound					ABBOTT ST Northbound					HARKINS RD Eastbound					Int. Total
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	1	13	4	18		12	7	2	21		8	12	4	24		7	6	10	23		86
04:15 PM	2	11	11	24		6	7	9	22		4	10	2	16		10	6	5	21		83
04:30 PM	1	13	8	22		9	4	16	29		9	11	2	22		2	7	8	17		90
04:45 PM	1	12	3	16		11	10	3	24		5	12	4	21		3	6	8	17		78
Total Volume	5	49	26	80		38	28	30	96		26	45	12	83		22	25	31	78		337
% App. Total	6.2	61.2	32.5			39.6	29.2	31.2			31.3	54.2	14.5			28.2	32.1	39.7			
PHF	.625	.942	.591	.833		.792	.700	.469	.828		.722	.938	.750	.865		.550	.893	.775	.848		.936

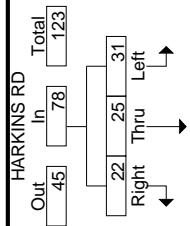
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

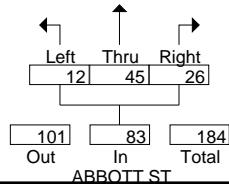
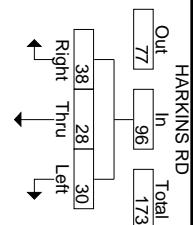
File Name : 1PM FINAL  
Site Code : 00000001  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:00 PM  
Trucks

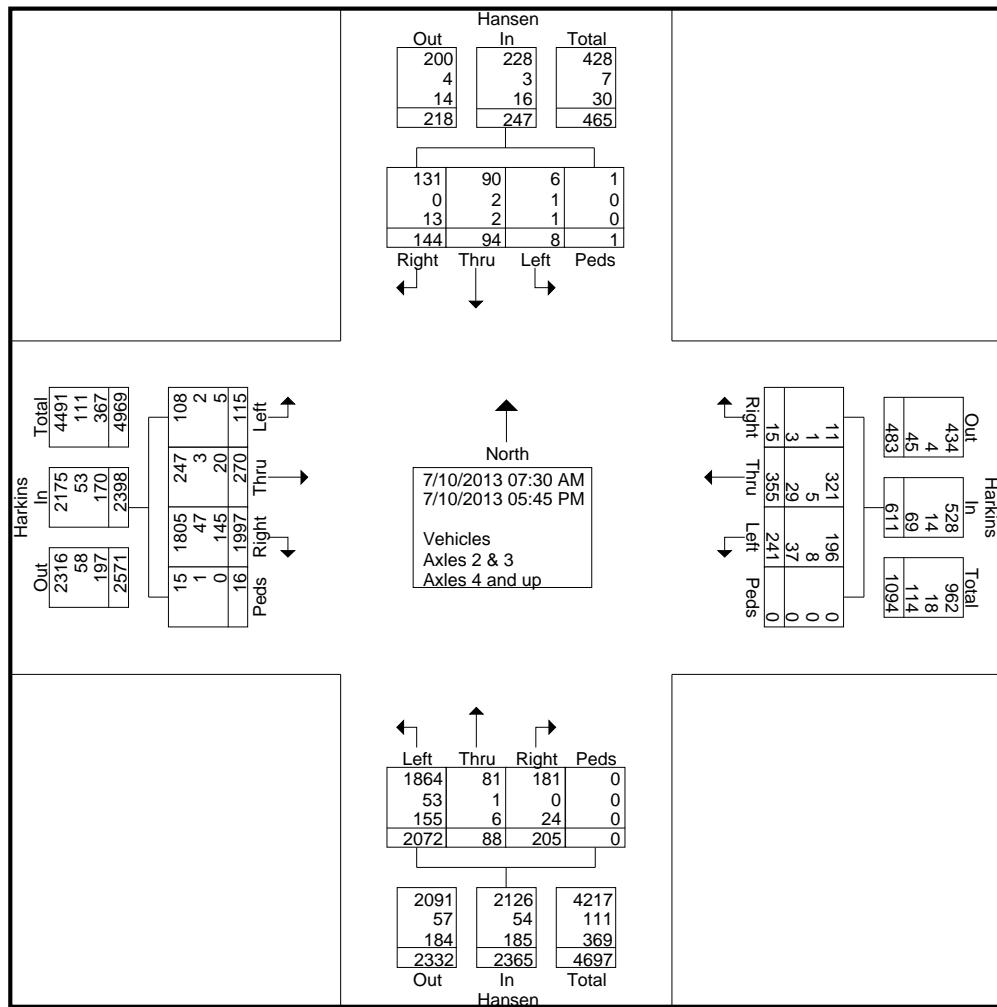




CITY OF SALINAS  
TURNING MOVEMENT PROGRAM

Harkins @ Hansen  
Counted By: Chris B.  
Weather: Clear  
Hours: 7:30am to 6:00pm

File Name : Harkins & Hansen  
Site Code : 36  
Start Date : 7/10/2013  
Page No : 2



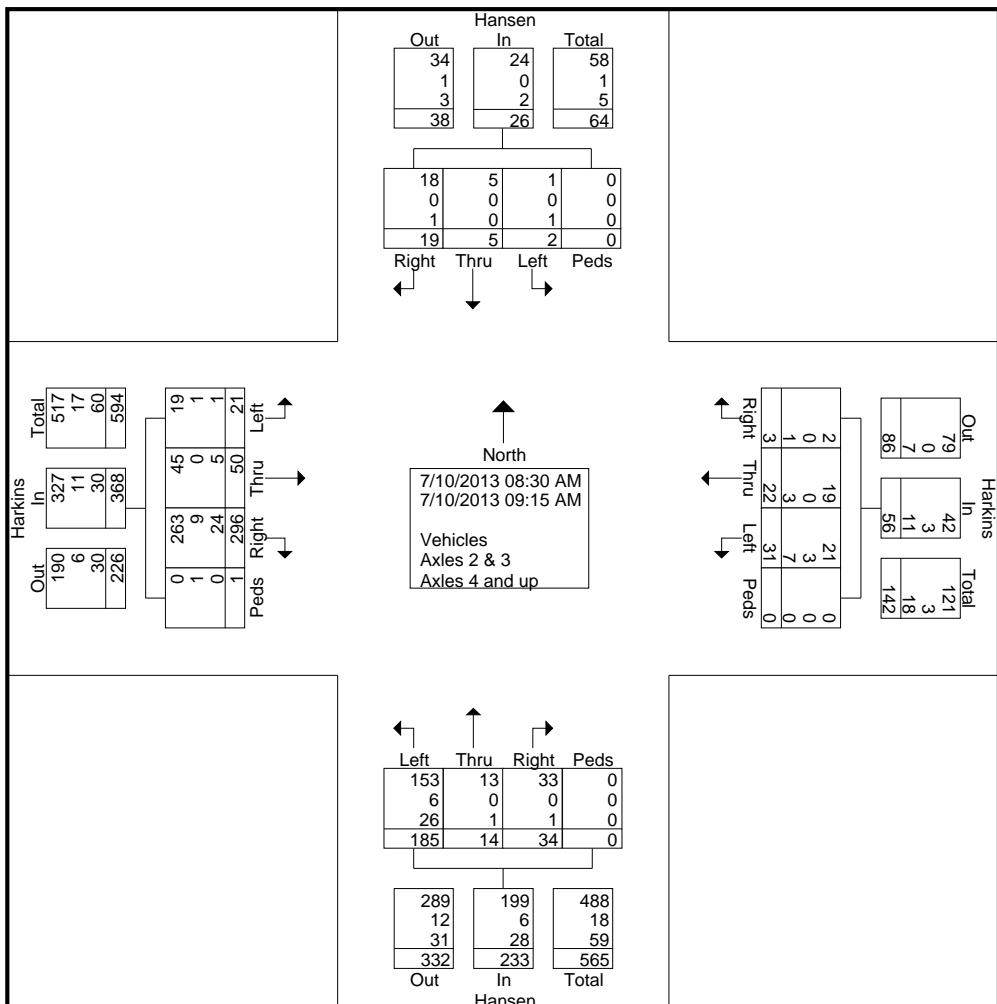
**CITY OF SALINAS**  
**TURNING MOVEMENT PROGRAM**

Harkins @ Hansen  
Counted By: Chris B.  
Weather: Clear  
Hours: 8:30am to 9:30am

File Name : Harkins & Hansen  
Site Code : 36  
Start Date : 7/10/2013  
Page No : 1

**Groups Printed- Vehicles - Axles 2 & 3 - Axles 4 and up**

	Hansen From North				Harkins From East				Hansen From South				Harkins From West				Int. Total
	Right	Thru	Left	Peds													
Start Time	Right	Thru	Left	Peds	Int. Total												
08:30 AM	4	0	1	0	1	9	9	0	7	6	54	0	95	14	6	1	207
08:45 AM	4	1	0	0	2	6	6	0	14	2	43	0	74	15	9	0	176
Total	8	1	1	0	3	15	15	0	21	8	97	0	169	29	15	1	383
09:00 AM	4	2	0	0	0	5	11	0	8	4	43	0	61	9	3	0	150
09:15 AM	7	2	1	0	0	2	5	0	5	2	45	0	66	12	3	0	150
Grand Total	19	5	2	0	3	22	31	0	34	14	185	0	296	50	21	1	683
Apprch %	73.1	19.2	7.7	0	5.4	39.3	55.4	0	14.6	6	79.4	0	80.4	13.6	5.7	0.3	
Total %	2.8	0.7	0.3	0	0.4	3.2	4.5	0	5	2	27.1	0	43.3	7.3	3.1	0.1	
Vehicles	18	5	1	0	2	19	21	0	33	13	153	0	263	45	19	0	592
% Vehicles	94.7	100	50	0	66.7	86.4	67.7	0	97.1	92.9	82.7	0	88.9	90	90.5	0	86.7
Axes 2 & 3	0	0	0	0	0	0	3	0	0	0	6	0	9	0	1	1	20
% Axes 2 & 3	0	0	0	0	0	0	9.7	0	0	0	3.2	0	3	0	4.8	100	2.9
Axes 4 and up	1	0	1	0	1	3	7	0	1	1	26	0	24	5	1	0	71
% Axes 4 and up	5.3	0	50	0	33.3	13.6	22.6	0	2.9	7.1	14.1	0	8.1	10	4.8	0	10.4



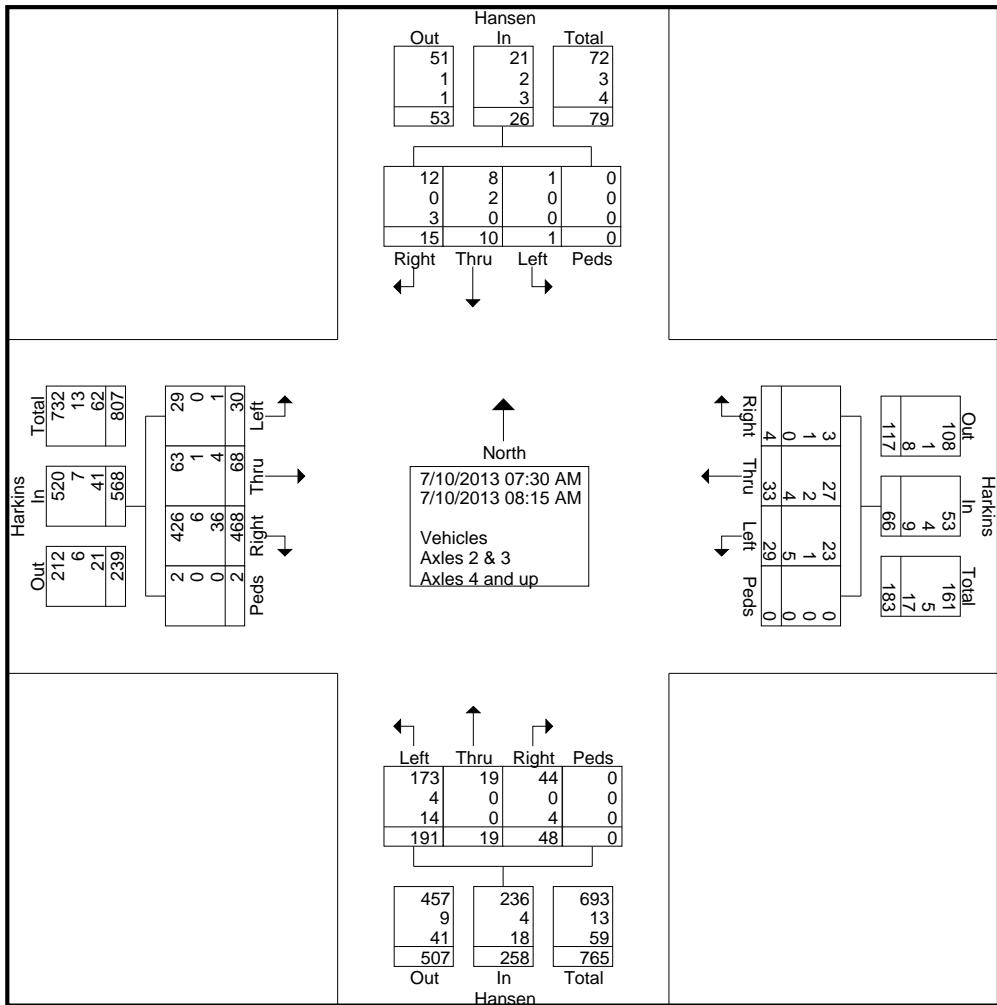
CITY OF SALINAS  
TURNING MOVEMENT PROGRAM

Harkins @ Hansen  
Counted By: Chris B.  
Weather: Clear  
Hours: 7:30am to 8:30am

File Name : Harkins & Hansen  
Site Code : 36  
Start Date : 7/10/2013  
Page No : 1

**Groups Printed- Vehicles - Axles 2 & 3 - Axles 4 and up**

Start Time	Hansen From North				Harkins From East				Hansen From South				Harkins From West				Int. Total
	Right	Thru	Left	Peds													
07:30 AM	4	1	0	0	1	13	8	0	9	4	46	0	100	11	8	0	205
07:45 AM	3	4	1	0	1	5	6	0	13	5	53	0	187	22	10	2	312
Total	7	5	1	0	2	18	14	0	22	9	99	0	287	33	18	2	517
08:00 AM	2	2	0	0	1	7	10	0	12	5	43	0	109	16	8	0	215
08:15 AM	6	3	0	0	1	8	5	0	14	5	49	0	72	19	4	0	186
Grand Total	15	10	1	0	4	33	29	0	48	19	191	0	468	68	30	2	918
Apprch %	57.7	38.5	3.8	0	6.1	50	43.9	0	18.6	7.4	74	0	82.4	12	5.3	0.4	
Total %	1.6	1.1	0.1	0	0.4	3.6	3.2	0	5.2	2.1	20.8	0	51	7.4	3.3	0.2	
Vehicles	12	8	1	0	3	27	23	0	44	19	173	0	426	63	29	2	830
% Vehicles	80	80	100	0	75	81.8	79.3	0	91.7	100	90.6	0	91	92.6	96.7	100	90.4
Axes 2 & 3	0	2	0	0	1	2	1	0	0	0	4	0	6	1	0	0	17
% Axes 2 & 3	0	20	0	0	25	6.1	3.4	0	0	0	2.1	0	1.3	1.5	0	0	1.9
Axes 4 and up	3	0	0	0	0	4	5	0	4	0	14	0	36	4	1	0	71
% Axes 4 and up	20	0	0	0	0	12.1	17.2	0	8.3	0	7.3	0	7.7	5.9	3.3	0	7.7



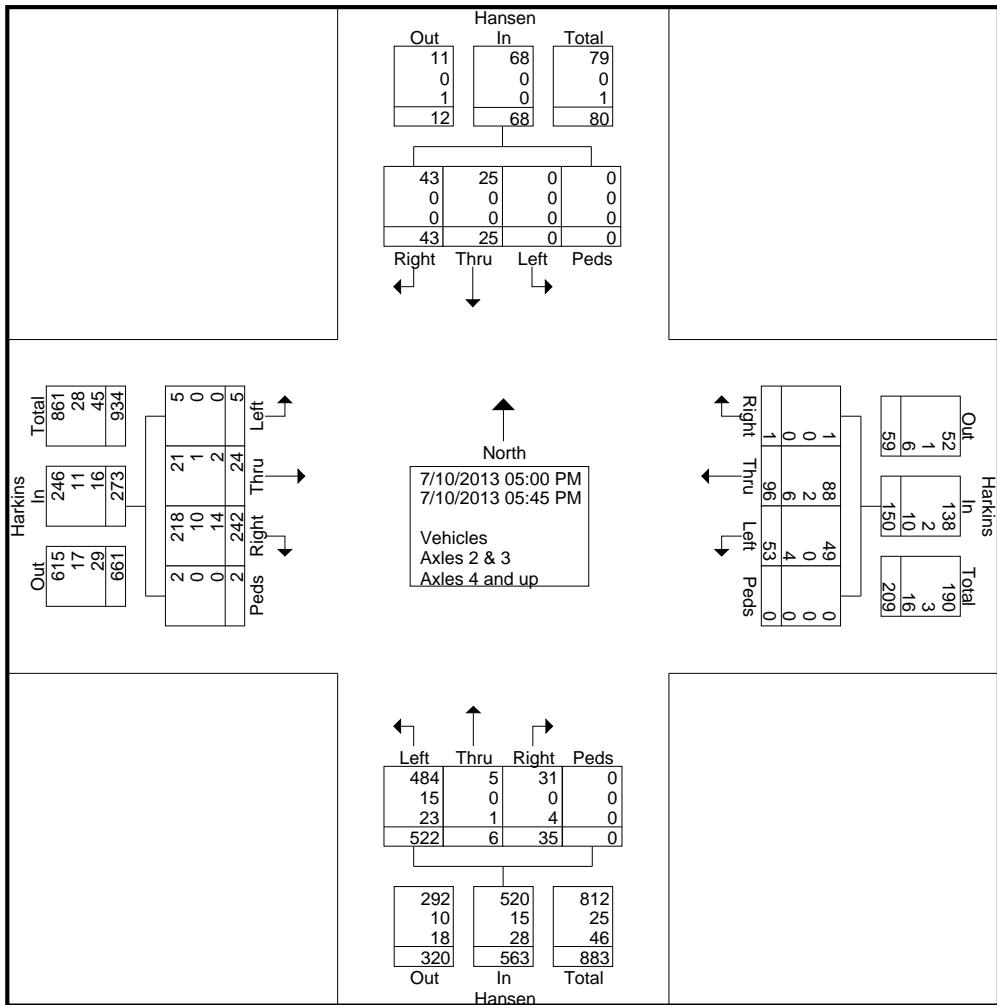
CITY OF SALINAS  
TURNING MOVEMENT PROGRAM

Harkins @ Hansen  
Counted By: Chris B.  
Weather: Clear  
Hours: 5:00pm to 6:00pm

File Name : Harkins & Hansen  
Site Code : 36  
Start Date : 7/10/2013  
Page No : 1

**Groups Printed- Vehicles - Axles 2 & 3 - Axles 4 and up**

	Hansen From North				Harkins From East				Hansen From South				Harkins From West				Int. Total
	Right	Thru	Left	Peds													
Start Time	Right	Thru	Left	Peds	Int. Total												
05:00 PM	27	15	0	0	0	54	27	0	17	3	150	0	63	6	1	0	363
05:15 PM	6	5	0	0	0	15	13	0	10	0	163	0	74	2	1	0	289
05:30 PM	3	3	0	0	0	17	7	0	4	2	106	0	56	13	0	2	213
05:45 PM	7	2	0	0	1	10	6	0	4	1	103	0	49	3	3	0	189
Total	43	25	0	0	1	96	53	0	35	6	522	0	242	24	5	2	1054
Grand Total	43	25	0	0	1	96	53	0	35	6	522	0	242	24	5	2	1054
Apprch %	63.2	36.8	0	0	0.7	64	35.3	0	6.2	1.1	92.7	0	88.6	8.8	1.8	0.7	
Total %	4.1	2.4	0	0	0.1	9.1	5	0	3.3	0.6	49.5	0	23	2.3	0.5	0.2	
Vehicles	43	25	0	0	1	88	49	0	31	5	484	0	218	21	5	2	972
% Vehicles	100	100	0	0	100	91.7	92.5	0	88.6	83.3	92.7	0	90.1	87.5	100	100	92.2
Axes 2 & 3	0	0	0	0	0	2	0	0	0	0	15	0	10	1	0	0	28
% Axes 2 & 3	0	0	0	0	0	2.1	0	0	0	0	2.9	0	4.1	4.2	0	0	2.7
Axes 4 and up	0	0	0	0	0	6	4	0	4	1	23	0	14	2	0	0	54
% Axes 4 and up	0	0	0	0	0	6.2	7.5	0	11.4	16.7	4.4	0	5.8	8.3	0	0	5.1



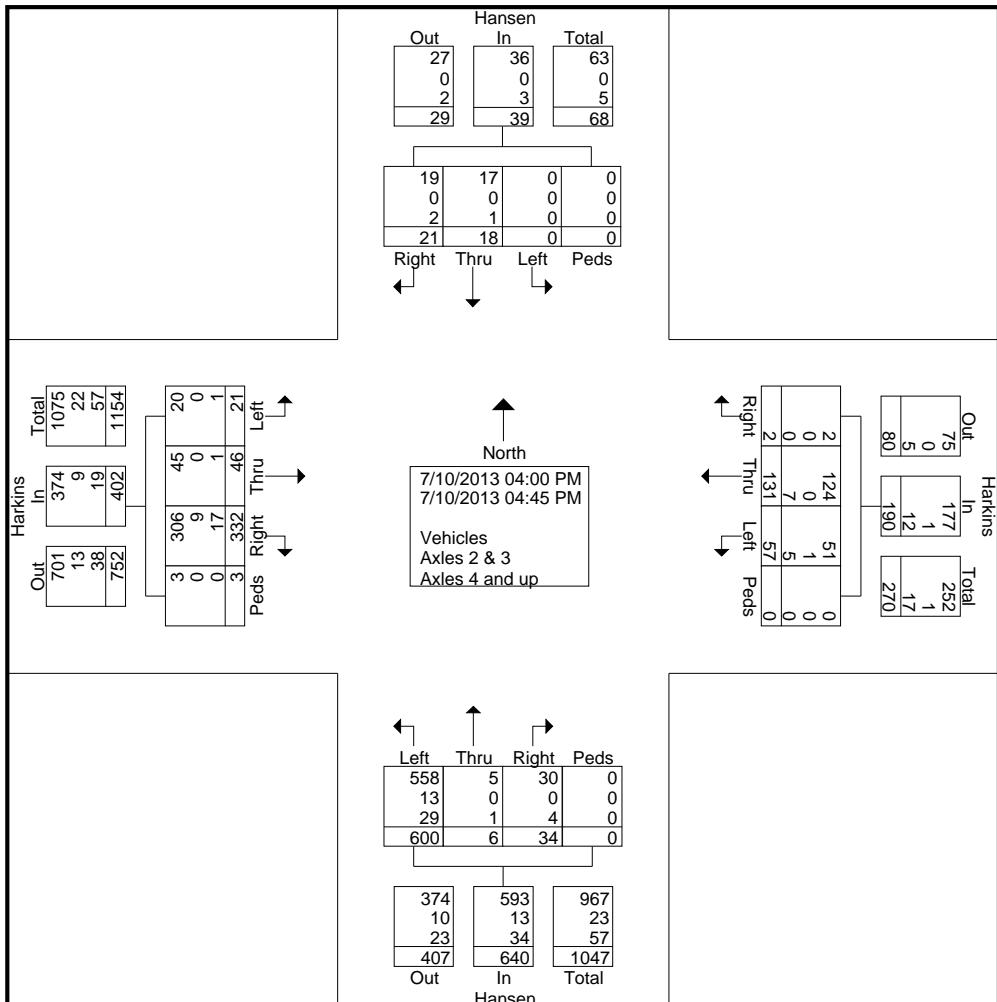
**CITY OF SALINAS**  
**TURNING MOVEMENT PROGRAM**

Harkins @ Hansen  
Counted By: Chris B.  
Weather: Clear  
Hours: 4:00pm to 5:00pm

File Name : Harkins & Hansen  
Site Code : 36  
Start Date : 7/10/2013  
Page No : 1

**Groups Printed- Vehicles - Axles 2 & 3 - Axles 4 and up**

	Hansen From North				Harkins From East				Hansen From South				Harkins From West				Int. Total
	Right	Thru	Left	Peds													
Start Time	Right	Thru	Left	Peds	Int. Total												
04:00 PM	10	10	0	0	0	19	15	0	9	3	140	0	84	15	4	2	311
04:15 PM	4	2	0	0	1	31	10	0	5	1	144	0	85	13	2	0	298
04:30 PM	3	0	0	0	0	37	18	0	5	0	158	0	87	7	6	0	321
04:45 PM	4	6	0	0	1	44	14	0	15	2	158	0	76	11	9	1	341
Total	21	18	0	0	2	131	57	0	34	6	600	0	332	46	21	3	1271
Grand Total	21	18	0	0	2	131	57	0	34	6	600	0	332	46	21	3	1271
Apprch %	53.8	46.2	0	0	1.1	68.9	30	0	5.3	0.9	93.8	0	82.6	11.4	5.2	0.7	
Total %	1.7	1.4	0	0	0.2	10.3	4.5	0	2.7	0.5	47.2	0	26.1	3.6	1.7	0.2	
Vehicles	19	17	0	0	2	124	51	0	30	5	558	0	306	45	20	3	1180
% Vehicles	90.5	94.4	0	0	100	94.7	89.5	0	88.2	83.3	93	0	92.2	97.8	95.2	100	92.8
Axes 2 & 3	0	0	0	0	0	0	1	0	0	0	13	0	9	0	0	0	23
% Axes 2 & 3	0	0	0	0	0	0	1.8	0	0	0	2.2	0	2.7	0	0	0	1.8
Axes 4 and up	2	1	0	0	0	7	5	0	4	1	29	0	17	1	1	0	68
% Axes 4 and up	9.5	5.6	0	0	0	5.3	8.8	0	11.8	16.7	4.8	0	5.1	2.2	4.8	0	5.4



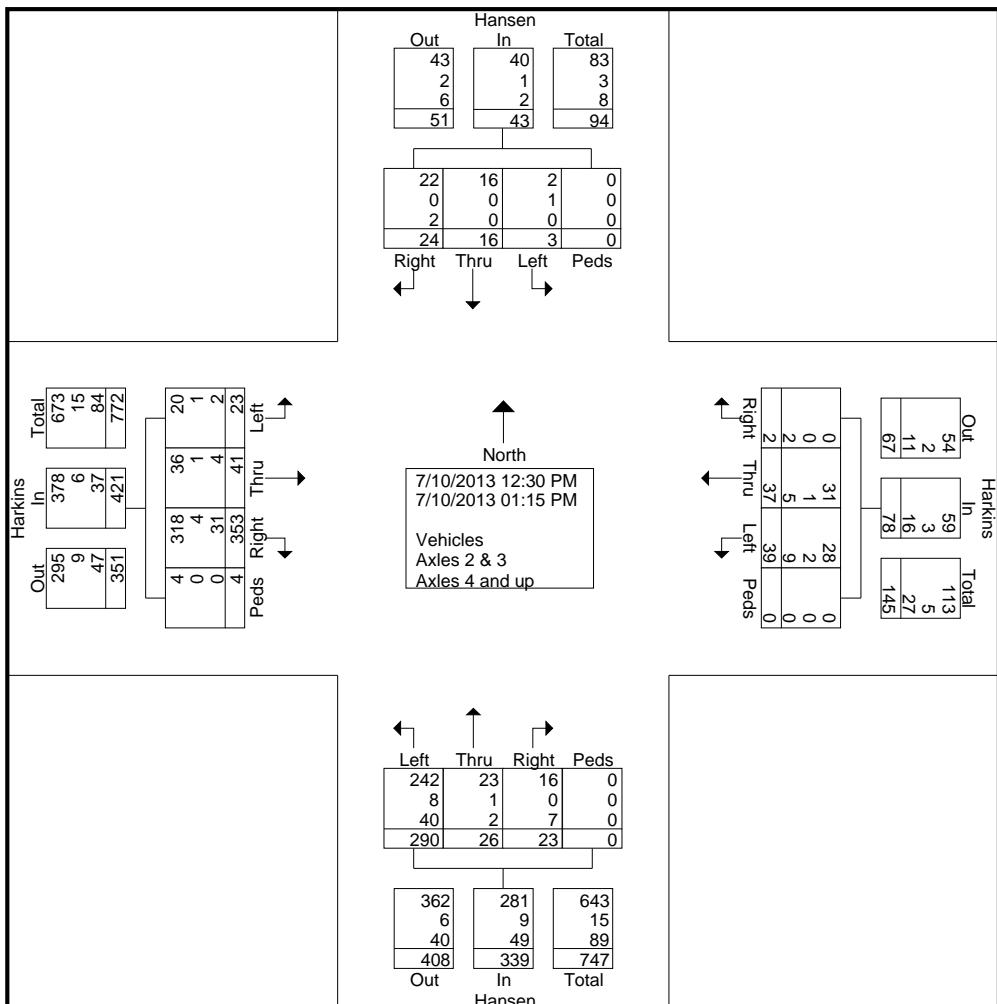
CITY OF SALINAS  
TURNING MOVEMENT PROGRAM

Harkins @ Hansen  
Counted By: Chris B.  
Weather: Clear  
Hours: 12:30pm to 1:30pm

File Name : Harkins & Hansen  
Site Code : 36  
Start Date : 7/10/2013  
Page No : 1

**Groups Printed- Vehicles - Axles 2 & 3 - Axles 4 and up**

	Hansen From North				Harkins From East				Hansen From South				Harkins From West				Int. Total
	Right	Thru	Left	Peds													
Start Time	Right	Thru	Left	Peds	Int. Total												
12:30 PM	2	6	0	0	1	11	6	0	3	6	75	0	86	7	3	0	206
12:45 PM	7	4	2	0	0	8	6	0	5	6	69	0	105	12	8	1	233
Total	9	10	2	0	1	19	12	0	8	12	144	0	191	19	11	1	439
01:00 PM	8	4	1	0	0	12	14	0	9	7	73	0	81	13	7	2	231
01:15 PM	7	2	0	0	1	6	13	0	6	7	73	0	81	9	5	1	211
Grand Total	24	16	3	0	2	37	39	0	23	26	290	0	353	41	23	4	881
Apprch %	55.8	37.2	7	0	2.6	47.4	50	0	6.8	7.7	85.5	0	83.8	9.7	5.5	1	
Total %	2.7	1.8	0.3	0	0.2	4.2	4.4	0	2.6	3	32.9	0	40.1	4.7	2.6	0.5	
Vehicles	22	16	2	0	0	31	28	0	16	23	242	0	318	36	20	4	758
% Vehicles	91.7	100	66.7	0	0	83.8	71.8	0	69.6	88.5	83.4	0	90.1	87.8	87	100	86
Axes 2 & 3	0	0	1	0	0	1	2	0	0	1	8	0	4	1	1	0	19
% Axes 2 & 3	0	0	33.3	0	0	2.7	5.1	0	0	3.8	2.8	0	1.1	2.4	4.3	0	2.2
Axes 4 and up	2	0	0	0	2	5	9	0	7	2	40	0	31	4	2	0	104
% Axes 4 and up	8.3	0	0	0	100	13.5	23.1	0	30.4	7.7	13.8	0	8.8	9.8	8.7	0	11.8



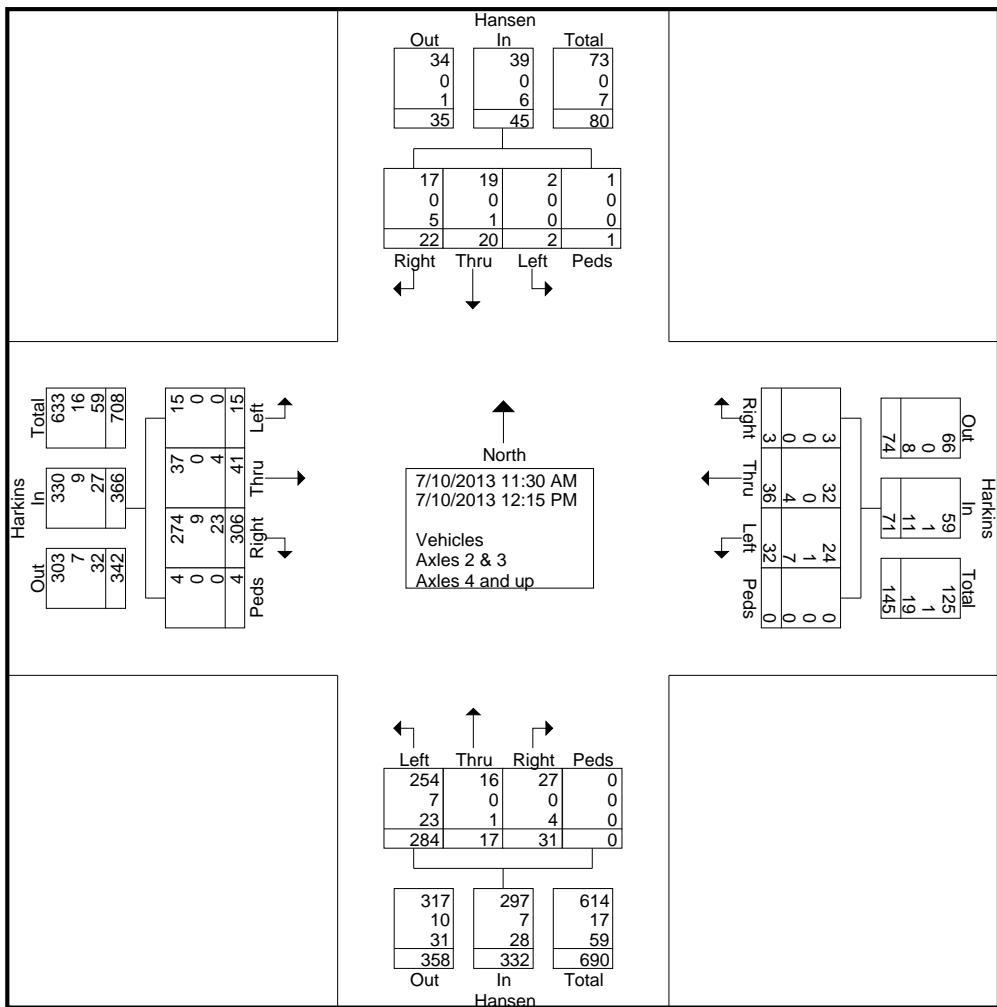
CITY OF SALINAS  
TURNING MOVEMENT PROGRAM

Harkins @ Hansen  
Counted By: Chris B.  
Weather: Clear  
Hours: 11:30am to 12:30pm

File Name : Harkins & Hansen  
Site Code : 36  
Start Date : 7/10/2013  
Page No : 1

**Groups Printed- Vehicles - Axles 2 & 3 - Axles 4 and up**

	Hansen From North				Harkins From East				Hansen From South				Harkins From West				Int. Total
	Right	Thru	Left	Peds													
Start Time	Right	Thru	Left	Peds	Int. Total												
11:30 AM	1	4	1	0	0	9	8	0	8	3	64	0	77	11	1	0	187
11:45 AM	8	5	1	0	2	5	7	0	7	4	62	0	82	6	3	1	193
Total	9	9	2	0	2	14	15	0	15	7	126	0	159	17	4	1	380
12:00 PM	9	7	0	1	1	18	12	0	11	2	81	0	79	8	6	1	236
12:15 PM	4	4	0	0	0	4	5	0	5	8	77	0	68	16	5	2	198
Grand Total	22	20	2	1	3	36	32	0	31	17	284	0	306	41	15	4	814
Apprch %	48.9	44.4	4.4	2.2	4.2	50.7	45.1	0	9.3	5.1	85.5	0	83.6	11.2	4.1	1.1	
Total %	2.7	2.5	0.2	0.1	0.4	4.4	3.9	0	3.8	2.1	34.9	0	37.6	5	1.8	0.5	
Vehicles	17	19	2	1	3	32	24	0	27	16	254	0	274	37	15	4	725
% Vehicles	77.3	95	100	100	100	88.9	75	0	87.1	94.1	89.4	0	89.5	90.2	100	100	89.1
Axes 2 & 3	0	0	0	0	0	0	1	0	0	0	7	0	9	0	0	0	17
% Axes 2 & 3	0	0	0	0	0	0	3.1	0	0	0	2.5	0	2.9	0	0	0	2.1
Axes 4 and up	5	1	0	0	0	4	7	0	4	1	23	0	23	4	0	0	72
% Axes 4 and up	22.7	5	0	0	0	11.1	21.9	0	12.9	5.9	8.1	0	7.5	9.8	0	0	8.8



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 2AM FINAL  
 Site Code : 00000002  
 Start Date : 6/18/2014  
 Page No : 1

Groups Printed- Vehicles

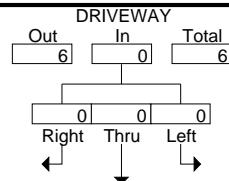
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	Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	2	5	7	0	1	85	0	86	40	3	1	1	45	1	0	0	5	6	144	
07:15 AM	0	0	0	29	29	0	4	101	0	105	28	5	1	0	34	0	0	0	29	29	197	
07:30 AM	0	0	0	25	25	0	2	128	0	130	80	1	0	0	81	2	0	0	28	30	266	
07:45 AM	0	0	0	29	29	0	2	199	0	201	53	0	1	1	55	0	1	0	27	28	313	
Total		0	0	2	88	90	0	9	513	0	522	201	9	3	2	215	3	1	0	89	93	920
08:00 AM		0	0	0	0	0	0	0	100	0	100	48	0	0	0	48	1	1	0	0	2	150
08:15 AM		0	0	0	2	2	0	0	72	0	72	44	0	1	0	45	2	0	0	2	4	123
08:30 AM		1	0	0	0	1	1	0	67	0	68	29	1	1	0	31	0	0	0	0	0	100
08:45 AM		0	0	0	0	0	0	2	66	0	68	40	0	0	0	40	1	1	1	0	3	111
Total		1	0	0	2	3	1	2	305	0	308	161	1	2	0	164	4	2	1	2	9	484
Grand Total		1	0	2	90	93	1	11	818	0	830	362	10	5	2	379	7	3	1	91	102	1404
Apprch %		1.1	0	2.2	96.8		0.1	1.3	98.6	0		95.5	2.6	1.3	0.5		6.9	2.9	1	89.2		
Total %		0.1	0	0.1	6.4	6.6	0.1	0.8	58.3	0	59.1	25.8	0.7	0.4	0.1	27	0.5	0.2	0.1	6.5	7.3	

	DRIVEWAY Southbound					AIRPORT BLVD Westbound					HANSEN ST Northbound					AIRPORT BLVD Eastbound					Int. Total	
	Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:15 AM																						
07:15 AM	0	0	0	0	0	0	4	101	105	28	5	1	34	0	0	0	0	0	0	0	139	
07:30 AM	0	0	0	0	0	0	2	128	130	80	1	0	81	2	0	0	0	2	0	0	213	
07:45 AM	0	0	0	0	0	0	2	199	201	53	0	1	54	0	1	0	0	1	0	0	256	
08:00 AM	0	0	0	0	0	0	0	100	100	48	0	0	48	1	1	0	0	2	0	0	150	
Total Volume		0	0	0	0	0	8	528	536	209	6	2	217	3	2	0	5	5	0	0	758	
% App. Total		0	0	0	0	0	1.5	98.5		96.3	2.8	0.9		60	40	0						
PHF	.000	.000	.000	.000	.000	.500	.663	.667	.653	.300	.500	.670	.375	.500	.000	.625	.740					

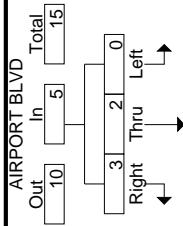
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

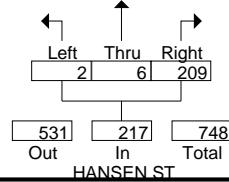
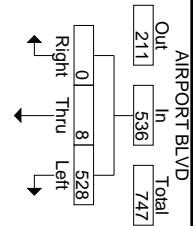
File Name : 2AM FINAL  
Site Code : 00000002  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 07:15 AM  
Vehicles



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 2AM FINAL  
 Site Code : 00000002  
 Start Date : 6/18/2014  
 Page No : 1

Groups Printed- Bikes

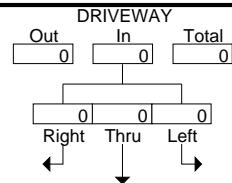
	DRIVEWAY Southbound					AIRPORT BLVD Westbound					HANSEN ST Northbound					AIRPORT BLVD Eastbound							
	Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15 AM	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total		0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	
08:00 AM		0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1
08:15 AM		0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1
08:30 AM		0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1
08:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	3
Grand Total		0	0	0	0	0	0	0	2	0	2	3	0	0	0	0	3	0	0	0	0	0	5
Apprch %		0	0	0	0	0	0	0	100	0	0	100	0	0	0	0	100	0	0	0	0	0	0
Total %		0	0	0	0	0	0	0	40	0	40	60	0	0	0	0	60	0	0	0	0	0	0

	DRIVEWAY Southbound					AIRPORT BLVD Westbound					HANSEN ST Northbound					AIRPORT BLVD Eastbound						
	Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:15 AM																						
07:15 AM	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
Total Volume		0	0	0	0	0	0	2	2	1	0	0	1	0	0	0	0	0	0	0	0	3
% App. Total		0	0	0	0	0	0	100	0	100	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.375

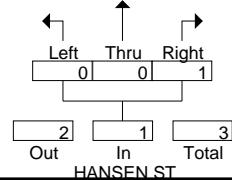
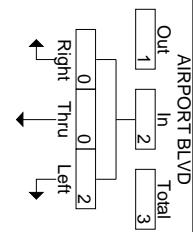
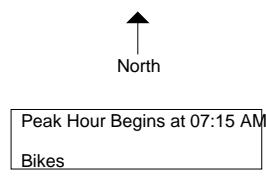
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 2AM FINAL  
Site Code : 00000002  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data

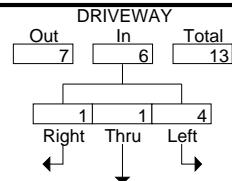




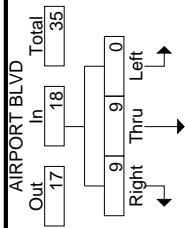
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

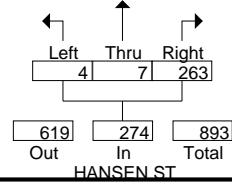
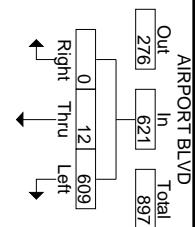
File Name : 2AM FINAL  
Site Code : 00000002  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 07:15 AM  
Vehicles Trucks

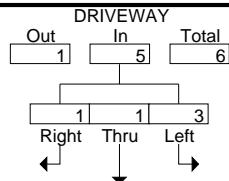




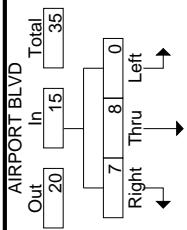
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

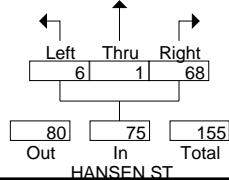
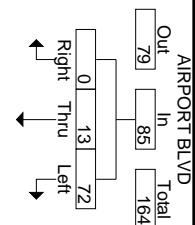
File Name : 2AM FINAL  
Site Code : 00000002  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 08:00 AM  
Trucks





# Traffic Data Service

Campbell, CA

(408) 377-2988

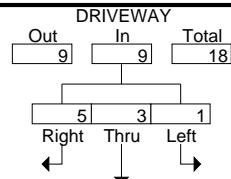
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 2PM FINAL

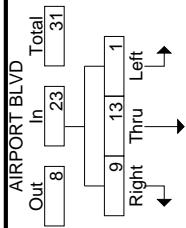
Site Code : 00000002

Start Date : 6/18/2014

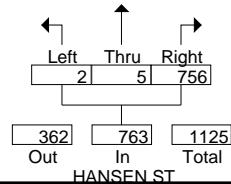
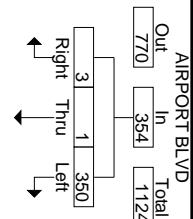
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:15 PM  
Vehicles



# Traffic Data Service

Campbell, CA  
**(408) 377-2988**  
***tdsbay@cs.com***

File Name : 2PM FINAL  
Site Code : 00000002  
Start Date : 6/18/2014  
Page No : 1

## Groups Printed- Bikes

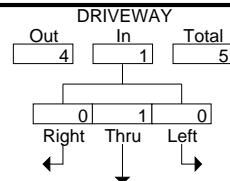
	DRIVeway Southbound					AIRPORT BLVD Westbound					HANSEN ST Northbound					AIRPORT BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	0	0	1	4	0	1	0	5	2	0	0	0	2	0	0	0	0	0	8
Grand Total	0	1	0	0	1	4	0	1	0	5	2	0	0	0	2	0	0	0	0	0	8
Apprch %	0	100	0	0	80	0	20	0	100	0	0	0	0	0	0	0	0	0	0	0	0
Total %	0	12.5	0	0	12.5	50	0	12.5	0	62.5	25	0	0	0	25	0	0	0	0	0	0

	DRIVEWAY Southbound				AIRPORT BLVD Westbound				HANSEN ST Northbound				AIRPORT BLVD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
05:15 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	2	0	0	2	1	0	0	1	0	0	0	0	3
05:45 PM	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	2
Total Volume	0	1	0	1	4	0	1	5	2	0	0	2	0	0	0	0	8
% App. Total	0	100	0		80	0	20		100	0	0		0	0	0	0	
PHF	.000	.250	.000	.250	.500	.000	.250	.625	.500	.000	.000	.500	.000	.000	.000	.000	.667

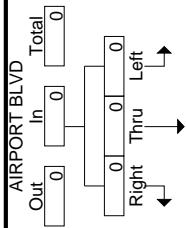
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

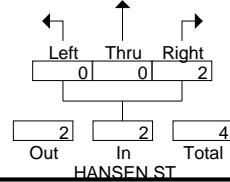
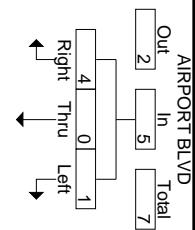
File Name : 2PM FINAL  
Site Code : 00000002  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 05:00 PM  
Bikes

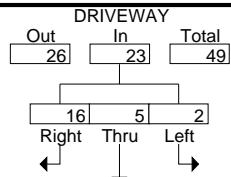




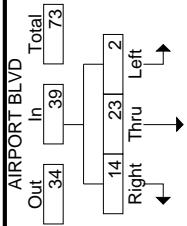
# Traffic Data Service

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(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

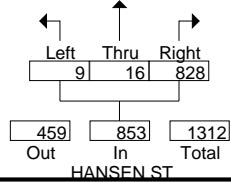
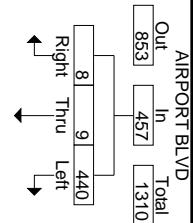
File Name : 2PM FINAL  
Site Code : 00000002  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:15 PM  
Vehicles Trucks



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 2PM FINAL  
 Site Code : 00000002  
 Start Date : 6/18/2014  
 Page No : 1

## Groups Printed- Trucks

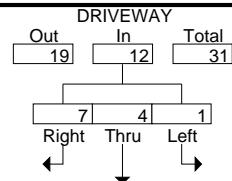
Start Time	DRIVEWAY Southbound					AIRPORT BLVD Westbound					HANSEN ST Northbound					AIRPORT BLVD Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	2	0	0	2	1	2	18	0	21	12	1	4	0	17	2	5	0	0	7	47
04:15 PM	1	0	0	0	1	2	2	27	0	31	19	5	3	0	27	0	2	0	0	2	61
04:30 PM	2	1	0	0	3	1	0	23	0	24	25	3	1	0	29	2	5	0	0	7	63
04:45 PM	4	1	1	0	6	2	3	21	0	26	13	3	0	0	16	2	2	1	0	5	53
Total	7	4	1	0	12	6	7	89	0	102	69	12	8	0	89	6	14	1	0	21	224
05:00 PM	4	0	0	0	4	0	3	19	0	22	15	0	3	0	18	1	1	0	0	2	46
05:15 PM	2	1	1	0	4	1	2	20	0	23	14	0	2	0	16	2	2	0	0	4	47
05:30 PM	0	1	1	0	2	2	4	19	0	25	22	2	1	0	25	0	0	1	0	1	53
05:45 PM	2	0	0	0	2	1	2	11	0	14	11	1	6	0	18	3	6	0	0	9	43
Total	8	2	2	0	12	4	11	69	0	84	62	3	12	0	77	6	9	1	0	16	189
Grand Total	15	6	3	0	24	10	18	158	0	186	131	15	20	0	166	12	23	2	0	37	413
Apprch %	62.5	25	12.5	0		5.4	9.7	84.9	0		78.9	9	12	0		32.4	62.2	5.4	0		
Total %	3.6	1.5	0.7	0	5.8	2.4	4.4	38.3	0	45	31.7	3.6	4.8	0	40.2	2.9	5.6	0.5	0	9	

Start Time	DRIVEWAY Southbound					AIRPORT BLVD Westbound					HANSEN ST Northbound					AIRPORT BLVD Eastbound						
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:00 PM																						
04:00 PM	0	2	0	2		1	2	18	21		12	1	4	17		2	5	0	7		47	
04:15 PM	1	0	0	1		2	2	27	31		19	5	3	27		0	2	0	2		61	
04:30 PM	2	1	0	3		1	0	23	24		25	3	1	29		2	5	0	7		63	
04:45 PM	4	1	1	6		2	3	21	26		13	3	0	16		2	2	1	5		53	
Total Volume	7	4	1	12		6	7	89	102		69	12	8	89		6	14	1	21		224	
% App. Total	58.3	33.3	8.3			5.9	6.9	87.3			77.5	13.5	9			28.6	66.7	4.8				
PHF	.438	.500	.250	.500		.750	.583	.824	.823		.690	.600	.500	.767		.750	.700	.250	.750		.889	

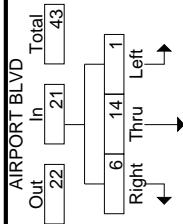
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

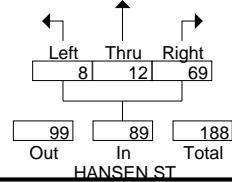
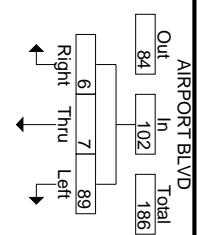
File Name : 2PM FINAL  
Site Code : 00000002  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:00 PM  
Trucks



# Traffic Data Service

Campbell, CA  
 (408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 3AM FINAL  
 Site Code : 00000003  
 Start Date : 6/18/2014  
 Page No : 1

## Groups Printed- Vehicles

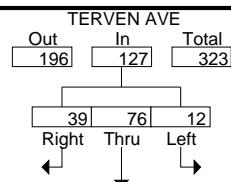
Start Time	TERVEN AVE Southbound					US-101 SB RAMPS Westbound					TERVEN AVE Northbound					AIRPORT BLVD Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	10	14	4	0	28	13	52	21	0	86	4	16	38	0	58	31	1	9	0	41	213
07:15 AM	12	18	4	0	34	12	81	46	0	139	7	14	44	0	65	29	2	0	0	31	269
07:30 AM	11	17	1	0	29	19	99	61	0	179	7	17	46	0	70	59	1	13	0	73	351
07:45 AM	11	24	3	0	38	24	134	93	0	251	6	40	73	0	119	46	3	9	2	60	468
Total	44	73	12	0	129	68	366	221	0	655	24	87	201	0	312	165	7	31	2	205	1301
08:00 AM	5	17	4	0	26	15	76	52	0	143	8	22	26	0	56	35	1	11	0	47	272
08:15 AM	8	23	4	0	35	5	52	41	0	98	8	16	20	0	44	30	1	9	0	40	217
08:30 AM	12	15	5	0	32	6	40	25	0	71	6	15	21	0	42	25	1	3	0	29	174
08:45 AM	13	19	4	2	38	8	34	21	0	63	5	16	22	0	43	22	1	10	0	33	177
Total	38	74	17	2	131	34	202	139	0	375	27	69	89	0	185	112	4	33	0	149	840
Grand Total	82	147	29	2	260	102	568	360	0	1030	51	156	290	0	497	277	11	64	2	354	2141
Apprch %	31.5	56.5	11.2	0.8		9.9	55.1	35	0		10.3	31.4	58.4	0		78.2	3.1	18.1	0.6		
Total %	3.8	6.9	1.4	0.1	12.1	4.8	26.5	16.8	0	48.1	2.4	7.3	13.5	0	23.2	12.9	0.5	3	0.1	16.5	

Start Time	TERVEN AVE Southbound					US-101 SB RAMPS Westbound					TERVEN AVE Northbound					AIRPORT BLVD Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	12	18	4	34		12	81	46	139		7	14	44	65		29	2	0	31		269
07:30 AM	11	17	1	29		19	99	61	179		7	17	46	70		59	1	13	73		351
07:45 AM	11	24	3	38		24	134	93	251		6	40	73	119		46	3	9	58		466
08:00 AM	5	17	4	26		15	76	52	143		8	22	26	56		35	1	11	47		272
Total Volume	39	76	12	127		70	390	252	712		28	93	189	310		169	7	33	209		1358
% App. Total	30.7	59.8	9.4			9.8	54.8	35.4			9	30	61			80.9	3.3	15.8			
PHF	.813	.792	.750	.836		.729	.728	.677	.709		.875	.581	.647	.651		.716	.583	.635	.716		.729

# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

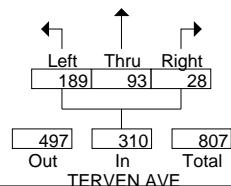
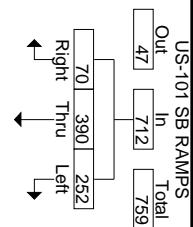
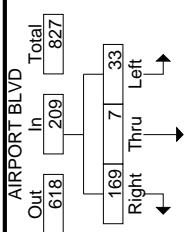
File Name : 3AM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data

North

Peak Hour Begins at 07:15 AM  
Vehicles



# Traffic Data Service

Campbell, CA  
**(408) 377-2988**  
**tdsbay@cs.com**

File Name : 3AM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 1

Groups Printed- Bikes

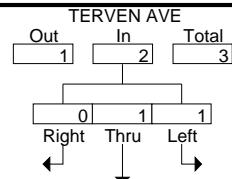
Start Time	TERVEN AVE Southbound					US-101 SB RAMPS Westbound					TERVEN AVE Northbound					AIRPORT BLVD Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
08:00 AM	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	2	0	0	1	0	1	0	1	0	0	1	2	0	0	0	0	6
Grand Total	0	1	1	0	2	0	0	1	0	1	0	1	1	0	2	2	0	0	0	2	7
Apprch %	0	50	50	0	0	0	0	100	0	0	0	50	50	0	100	0	0	0	0	0	0
Total %	0	14.3	14.3	0	28.6	0	0	14.3	0	14.3	0	14.3	14.3	0	28.6	28.6	0	0	0	28.6	

Start Time	TERVEN AVE Southbound					US-101 SB RAMPS Westbound					TERVEN AVE Northbound					AIRPORT BLVD Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	1	2	2	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	0	1	1	2	2	0	0	1	1	1	0	1	0	1	2	0	0	0	2	6	
% App. Total	0	50	50	0	0	0	0	100	0	0	0	100	0	0	100	0	0	0	0	0	
PHF	.000	.250	.250	.250	.000	.000	.250	.250	.000	.250	.000	.250	.000	.250	.500	.000	.000	.500	.500	.500	

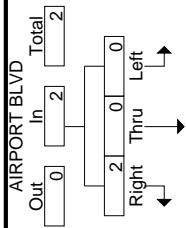
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

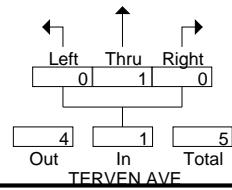
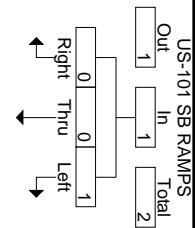
File Name : 3AM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 07:45 AM  
Bikes

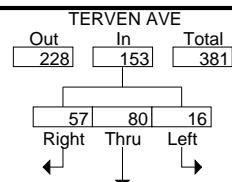




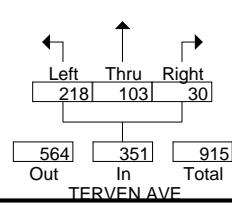
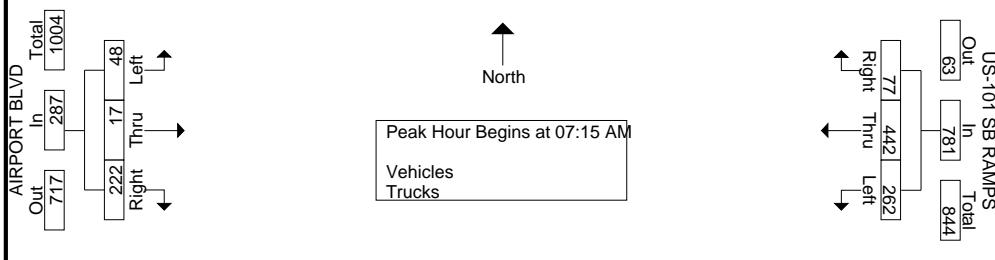
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 3AM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



# Traffic Data Service

Campbell, CA

(408) 377-2988

[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 3AM FINAL

Site Code : 00000003

Start Date : 6/18/2014

Page No : 1

**Groups Printed- Trucks**

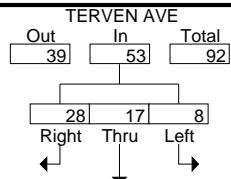
Start Time	TERVEN AVE Southbound					US-101 SB RAMPS Westbound					TERVEN AVE Northbound					AIRPORT BLVD Eastbound						
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
07:00 AM	0	1	5	0	6	1	10	0	0	11	1	3	17	0	21	7	2	1	0	10	48	
07:15 AM	6	1	1	0	8	1	15	4	0	20	1	1	6	0	8	12	6	2	0	20	56	
07:30 AM	3	0	1	0	4	1	17	3	0	21	1	3	9	0	13	16	1	2	0	19	57	
07:45 AM	6	0	0	0	6	2	16	1	0	19	0	1	7	0	8	10	1	3	0	14	47	
Total	15	2	7	0	24	5	58	8	0	71	3	8	39	0	50	45	10	8	0	63	208	
08:00 AM	3	3	2	0	8	3	4	2	0	9	0	5	7	0	12	15	2	8	0	25	54	
08:15 AM	11	7	2	0	20	1	13	2	0	16	2	2	7	0	11	21	3	6	0	30	77	
08:30 AM	9	5	2	0	16	3	11	1	0	15	1	2	7	0	10	16	2	1	0	19	60	
08:45 AM	5	2	2	0	9	1	13	1	0	15	2	4	5	0	11	15	2	3	0	20	55	
Total	28	17	8	0	53	8	41	6	0	55	5	13	26	0	44	67	9	18	0	94	246	
Grand Total	43	19	15	0	77	13	99	14	0	126	8	21	65	0	94	112	19	26	0	157	454	
Apprch %	55.8	24.7	19.5	0		10.3	78.6	11.1	0		8.5	22.3	69.1	0		71.3	12.1	16.6	0			
Total %	9.5	4.2	3.3	0		17	2.9	21.8	3.1	0	27.8	1.8	4.6	14.3	0	20.7	24.7	4.2	5.7	0	34.6	

Start Time	TERVEN AVE Southbound					US-101 SB RAMPS Westbound					TERVEN AVE Northbound					AIRPORT BLVD Eastbound					
	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	3	3	2	8		3	4	2	9		0	5	7	12		15	2	8	25		54
08:15 AM	11	7	2	20		1	13	2	16		2	2	7	11		21	3	6	30		77
08:30 AM	9	5	2	16		3	11	1	15		1	2	7	10		16	2	1	19		60
08:45 AM	5	2	2	9		1	13	1	15		2	4	5	11		15	2	3	20		55
Total Volume	28	17	8	53		8	41	6	55		5	13	26	44		67	9	18	94		246
% App. Total	52.8	32.1	15.1			14.5	74.5	10.9			11.4	29.5	59.1			71.3	9.6	19.1			
PHF	.636	.607	1.00	.663		.667	.788	.750	.859		.625	.650	.929	.917		.798	.750	.563	.783		.799

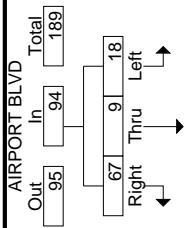
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

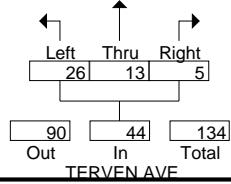
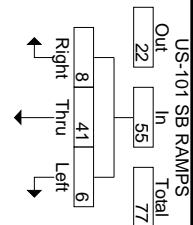
File Name : 3AM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 08:00 AM  
Trucks

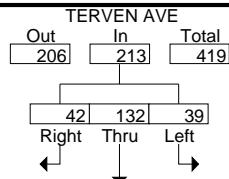




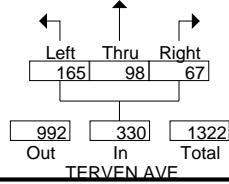
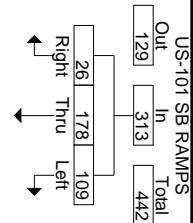
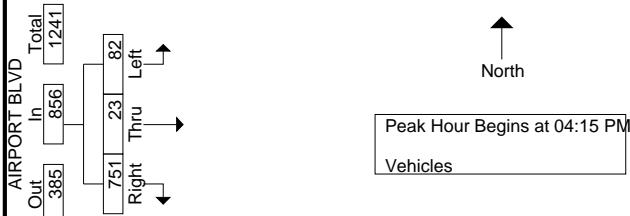
# Traffic Data Service

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(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 3PM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



# Traffic Data Service

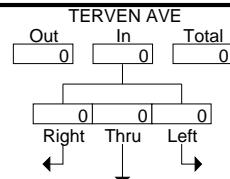
Campbell, CA  
**(408) 377-2988**  
***tdsbay@cs.com***

File Name : 3PM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 1

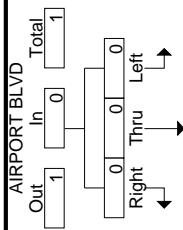
# Traffic Data Service

Campbell, CA  
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[tdsbay@cs.com](mailto:tdsbay@cs.com)

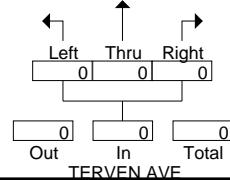
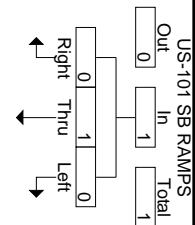
File Name : 3PM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:15 PM  
Bikes

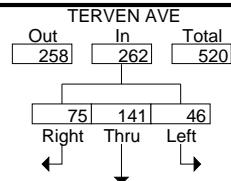




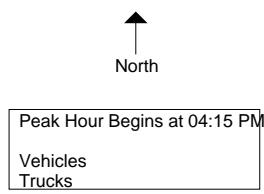
# Traffic Data Service

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[tdsbay@cs.com](mailto:tdsbay@cs.com)

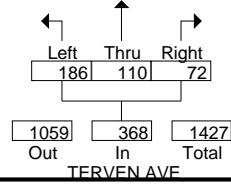
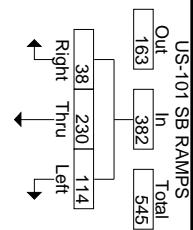
File Name : 3PM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:15 PM  
Vehicles Trucks

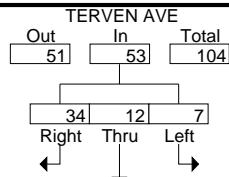




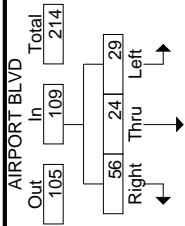
# Traffic Data Service

Campbell, CA  
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[tdsbay@cs.com](mailto:tdsbay@cs.com)

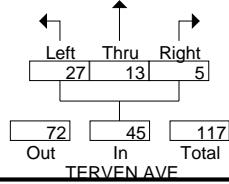
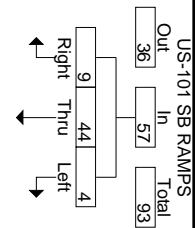
File Name : 3PM FINAL  
Site Code : 00000003  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:00 PM  
Trucks

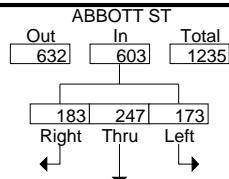




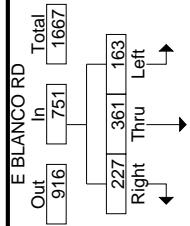
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

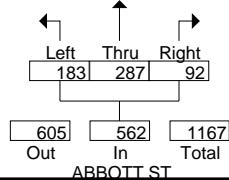
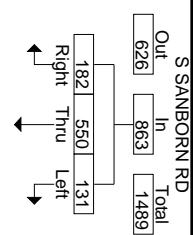
File Name : 4AM FINAL  
Site Code : 00000004  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 07:30 AM  
Vehicles



# Traffic Data Service

Campbell, CA  
**(408) 377-2988**  
***tdsbay@cs.com***

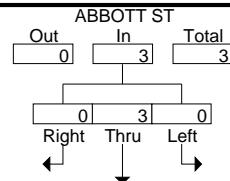
File Name : 4AM FINAL  
Site Code : 00000004  
Start Date : 6/18/2014  
Page No : 1

## Groups Printed- Bikes

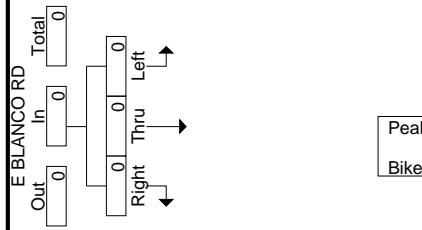
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

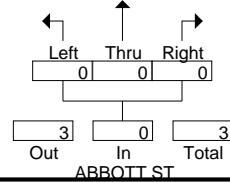
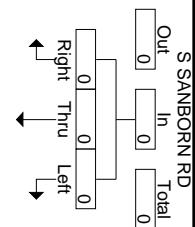
File Name : 4AM FINAL  
Site Code : 00000004  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 07:00 AM  
Bikes





# Traffic Data Service

Campbell, CA

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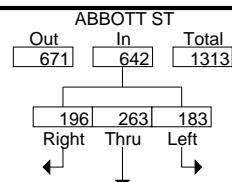
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 4AM FINAL

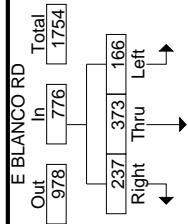
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Start Date : 6/18/2014

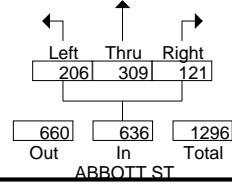
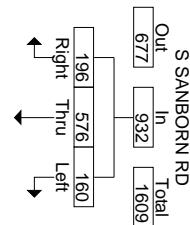
Page No : 2



## Peak Hour Data



Peak Hour Begins at 07:30 AM  
Vehicles  
Trucks



# Traffic Data Service

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File Name : 4AM FINAL  
 Site Code : 00000004  
 Start Date : 6/18/2014  
 Page No : 1

## Groups Printed- Trucks

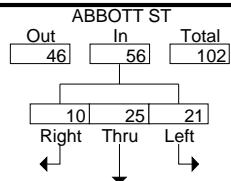
Start Time	ABBOTT ST Southbound					S SANBORN RD Westbound					ABBOTT ST Northbound					E BLANCO RD Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	1	0	1	0	6	3	0	9	10	1	4	0	15	1	4	2	0	7	32
07:15 AM	1	4	3	0	8	3	4	3	0	10	6	4	3	0	13	5	4	3	0	12	43
07:30 AM	2	1	2	0	5	2	3	8	0	13	5	6	5	0	16	1	3	0	0	4	38
07:45 AM	2	2	0	0	4	2	8	12	0	22	9	2	4	0	15	0	2	2	0	4	45
Total	5	7	6	0	18	7	21	26	0	54	30	13	16	0	59	7	13	7	0	27	158
08:00 AM	1	11	3	0	15	5	8	5	0	18	12	4	6	0	22	3	3	1	0	7	62
08:15 AM	8	2	5	0	15	5	7	4	0	16	3	10	8	0	21	6	4	0	0	10	62
08:30 AM	0	3	7	0	10	2	11	5	0	18	10	5	5	0	20	3	5	3	0	11	59
08:45 AM	1	9	6	0	16	3	8	5	0	16	7	8	7	0	22	3	5	0	0	8	62
Total	10	25	21	0	56	15	34	19	0	68	32	27	26	0	85	15	17	4	0	36	245
Grand Total	15	32	27	0	74	22	55	45	0	122	62	40	42	0	144	22	30	11	0	63	403
Apprch %	20.3	43.2	36.5	0		18	45.1	36.9	0		43.1	27.8	29.2	0		34.9	47.6	17.5	0		
Total %	3.7	7.9	6.7	0	18.4	5.5	13.6	11.2	0	30.3	15.4	9.9	10.4	0	35.7	5.5	7.4	2.7	0	15.6	

Start Time	ABBOTT ST Southbound				S SANBORN RD Westbound				ABBOTT ST Northbound				E BLANCO RD Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	1	11	3	15	5	8	5	18	12	4	6	22	3	3	1	7	62
08:15 AM	8	2	5	15	5	7	4	16	3	10	8	21	6	4	0	10	62
08:30 AM	0	3	7	10	2	11	5	18	10	5	5	20	3	5	3	11	59
08:45 AM	1	9	6	16	3	8	5	16	7	8	7	22	3	5	0	8	62
Total Volume	10	25	21	56	15	34	19	68	32	27	26	85	15	17	4	36	245
% App. Total	17.9	44.6	37.5		22.1	50	27.9		37.6	31.8	30.6		41.7	47.2	11.1		
PHF	.313	.568	.750	.875	.750	.773	.950	.944	.667	.675	.813	.966	.625	.850	.333	.818	.988

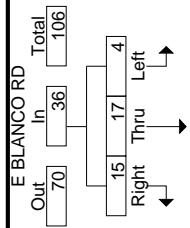
# Traffic Data Service

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(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

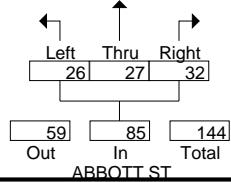
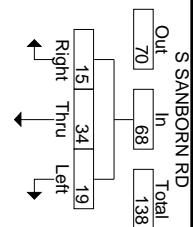
File Name : 4AM FINAL  
Site Code : 00000004  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 08:00 AM  
Trucks

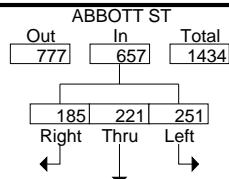




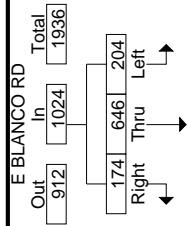
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

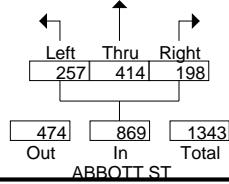
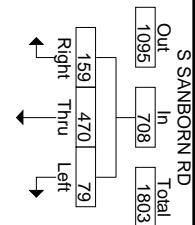
File Name : 4PM FINAL  
Site Code : 00000004  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 04:15 PM  
Vehicles

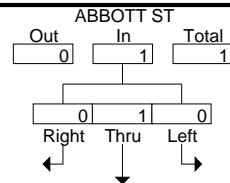




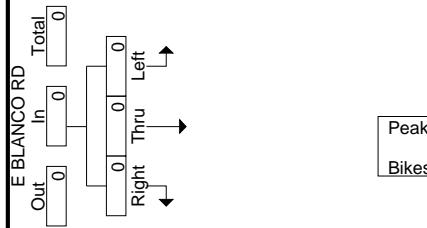
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

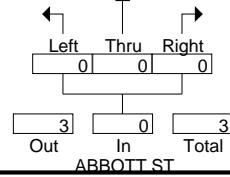
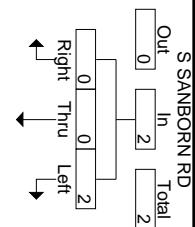
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Site Code : 00000004  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 05:00 PM  
Bikes

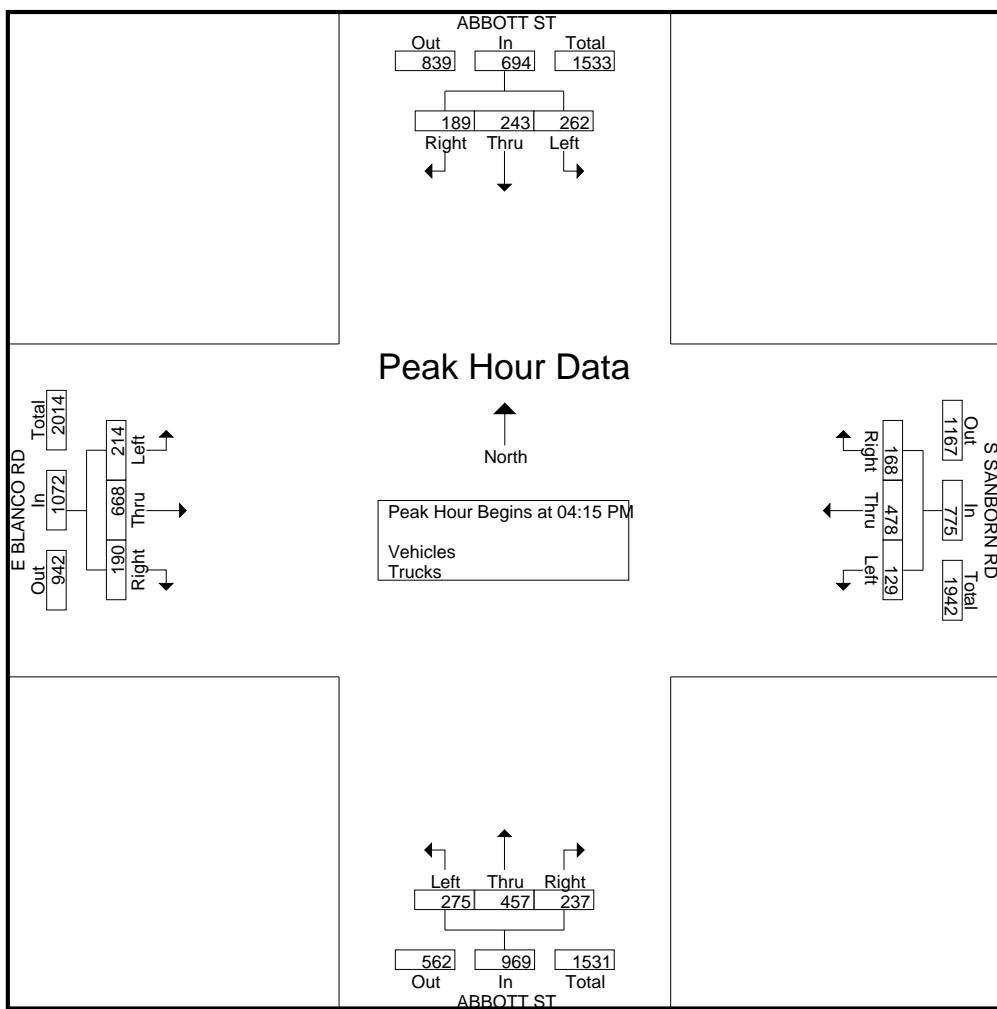




# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

File Name : 4PM FINAL  
Site Code : 00000004  
Start Date : 6/18/2014  
Page No : 2

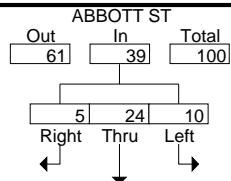




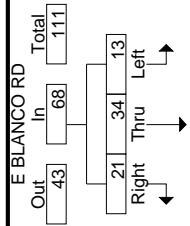
# Traffic Data Service

Campbell, CA  
(408) 377-2988  
[tdsbay@cs.com](mailto:tdsbay@cs.com)

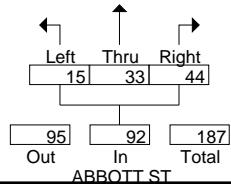
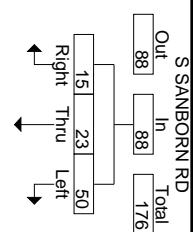
File Name : 4PM FINAL  
Site Code : 00000004  
Start Date : 6/18/2014  
Page No : 2



## Peak Hour Data



Peak Hour Begins at 05:00 PM  
Trucks



## **Appendix C**

## HCM Signalized Intersection Capacity Analysis

1: Harkins Rd. &amp; Abbott St.

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑ ↗	↑ ↖		↑ ↗	↑ ↖	↑ ↗	↑ ↗	↑ ↖	↑ ↗	↑ ↗	↑ ↖	
Volume (vph)	110	245	149	94	428	58	94	101	85	118	248	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	5.6	5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1556	3113		1410	3252	1131	1805	2935	1262	1492	2932	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1556	3113		1410	3252	1131	1805	2935	1262	1492	2932	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	147	327	199	125	571	77	125	135	113	157	331	219
RTOR Reduction (vph)	0	97	0	0	0	51	0	0	89	0	139	0
Lane Group Flow (vph)	147	429	0	125	571	26	125	135	24	157	411	0
Confl. Ped. (#/hr)	1		1			1	1			1		
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	16%	10%	7%	28%	11%	41%	0%	23%	28%	21%	8%	26%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5			1	6		3	8		7		
Permitted Phases		2			6	6		8	8		4	
Actuated Green, G (s)	7.0	27.5		7.0	27.5	27.5	6.0	17.0	17.0	6.4	17.4	
Effective Green, g (s)	7.0	27.5		7.0	27.5	27.5	6.0	17.0	17.0	6.4	17.4	
Actuated g/C Ratio	0.09	0.34		0.09	0.34	0.34	0.07	0.21	0.21	0.08	0.21	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	5.6	5.6	5.6	5.6	5.6	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	134	1055		121	1102	383	133	615	264	117	629	
v/s Ratio Prot	c0.09			0.09	c0.18		0.07	0.05		c0.11		
v/s Ratio Perm		0.14				0.02			0.02		c0.14	
v/c Ratio	1.10	0.41		1.03	0.52	0.07	0.94	0.22	0.09	1.34	0.65	
Uniform Delay, d1	37.0	20.5		37.0	21.5	18.1	37.4	26.6	25.8	37.3	29.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	106.1	1.2		90.9	1.7	0.3	59.0	0.2	0.2	200.2	2.7	
Delay (s)	143.2	21.7		128.0	23.2	18.5	96.4	26.8	26.0	237.6	31.8	
Level of Service	F	C		F	C	B	F	C	C	F	C	
Approach Delay (s)		48.2			39.7			49.9			77.5	
Approach LOS		D			D			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		54.1		HCM 2000 Level of Service					D			
HCM 2000 Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		81.1		Sum of lost time (s)					23.2			
Intersection Capacity Utilization		64.4%		ICU Level of Service					C			
Analysis Period (min)		15										
c Critical Lane Group												

## HCM Signalized Intersection Capacity Analysis

2: Harkins Rd. &amp; Schilling/Hansen St.

7/2/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	68	468	29	33	4	191	19	48	1	10	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	5.2	5.2				5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	0.95	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	0.99	1.00	1.00				1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00
FrI	1.00	0.85	1.00	0.98				1.00	0.85	1.00	1.00	0.85
FlI Protected	0.98	1.00	0.95	1.00				0.96	1.00	1.00	1.00	1.00
Satd. Flow (prot)	3361	1462	1492	1573				1680	1476	1596	1328	
FlI Permitted	0.98	1.00	0.95	1.00				0.96	1.00	1.00	1.00	1.00
Satd. Flow (perm)	3361	1462	1492	1573				1680	1476	1596	1328	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	41	92	632	39	45	5	258	26	65	1	14	20
RTOR Reduction (vph)	0	0	475	0	4	0	0	0	51	0	0	19
Lane Group Flow (vph)	0	133	157	39	46	0	0	284	14	0	15	1
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	3%	7%	9%	21%	18%	25%	9%	0%	8%	0%	20%	20%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	2	2		6	6		7	7		8	8	
Permitted Phases			2						7			8
Actuated Green, G (s)	21.6	21.6	21.2	21.2				18.4	18.4		3.9	3.9
Effective Green, g (s)	21.6	21.6	21.2	21.2				18.4	18.4		3.9	3.9
Actuated g/C Ratio	0.25	0.25	0.24	0.24				0.21	0.21		0.04	0.04
Clearance Time (s)	5.2	5.2	5.2	5.2				5.6	5.6		5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0				3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	837	364	364	384				356	313		71	59
v/s Ratio Prot	0.04		0.03	c0.03				c0.17			c0.01	
v/s Ratio Perm		c0.11							0.01			0.00
v/c Ratio	0.16	0.43	0.11	0.12				0.80	0.04		0.21	0.02
Uniform Delay, d1	25.4	27.4	25.4	25.5				32.4	27.2		39.9	39.6
Progression Factor	1.00	1.00	1.00	1.00				1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	3.7	0.6	0.6				11.8	0.1		1.5	0.1
Delay (s)	25.9	31.1	26.0	26.1				44.1	27.2		41.4	39.7
Level of Service	C	C	C	C				D	C		D	D
Approach Delay (s)	30.2			26.1				41.0			40.4	
Approach LOS		C		C				D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service						C				
HCM 2000 Volume to Capacity ratio	0.42											
Actuated Cycle Length (s)	86.7	Sum of lost time (s)						21.6				
Intersection Capacity Utilization	64.5%	ICU Level of Service						C				
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

3: Airport Blvd. & Hansen St.

7/2/2014



Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	11	263	13	10	609	13
Sign Control	Free		Stop			Free
Grade	0%		0%			0%
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	14	337	17	13	781	17
Pedestrians	6		6			6
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None				None	
Median storage veh)						
Upstream signal (ft)	1012				1263	
pX, platoon unblocked	0.97		0.97	0.97		
vC, conflicting volume	803		1158	402		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	725		1092	309		
tC, single (s)	4.1		8.4	8.2		
tC, 2 stage (s)						
tF (s)	2.2		4.3	4.0		
p0 queue free %	98		85	97		
cM capacity (veh/h)	839		112	504		
Direction, Lane #	NW 1	NW 2	NE 1	SW 1	SW 2	SW 3
Volume Total	14	337	29	390	390	17
Volume Left	14	0	17	0	0	0
Volume Right	0	0	13	0	0	17
cSH	839	1700	169	1700	1700	1700
Volume to Capacity	0.02	0.20	0.17	0.23	0.23	0.01
Queue Length 95th (ft)	1	0	15	0	0	0
Control Delay (s)	9.4	0.0	30.8	0.0	0.0	0.0
Lane LOS	A		D			
Approach Delay (s)	0.4		30.8	0.0		
Approach LOS			D			
Intersection Summary						
Average Delay	0.9					
Intersection Capacity Utilization	35.9%	ICU Level of Service	A			
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis  
4: Airport Blvd. & Terven Ave.-Airport Blvd. & SB Ramps

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	80	57	218	103	30	48	17	222	262	442	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2				4.2	4.2	3.7	5.3	4.0	3.7	5.3	
Lane Util. Factor	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95
Frpb, ped/bikes	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>	0.95				1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.98
Flt Protected	0.99				0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1524				1640	1509	1378	1195	1302	1736	3164	
Flt Permitted	0.99				0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1524				1640	1509	1378	1195	1302	1736	3164	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	21	105	75	287	136	39	63	22	292	345	582	101
RTOR Reduction (vph)	0	29	0	0	0	31	0	0	0	0	18	0
Lane Group Flow (vph)	0	172	0	0	423	8	63	22	292	345	665	0
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	25%	5%	32%	13%	10%	7%	31%	59%	24%	4%	12%	9%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases					3				Free			
Actuated Green, G (s)	12.9				14.0	14.0	7.1	8.3	70.3	17.7	18.9	
Effective Green, g (s)	12.9				14.0	14.0	7.1	8.3	70.3	17.7	18.9	
Actuated g/C Ratio	0.18				0.20	0.20	0.10	0.12	1.00	0.25	0.27	
Clearance Time (s)	4.2				4.2	4.2	3.7	5.3		3.7	5.3	
Vehicle Extension (s)	3.0				3.0	3.0	3.5	3.0		3.0	3.0	
Lane Grp Cap (vph)	279				326	300	139	141	1302	437	850	
v/s Ratio Prot	c0.11				c0.26		0.05	0.02		c0.20	c0.21	
v/s Ratio Perm						0.01			0.22			
v/c Ratio	0.62				1.30	0.03	0.45	0.16	0.22	0.79	0.78	
Uniform Delay, d1	26.4				28.1	22.7	29.8	27.9	0.0	24.6	23.8	
Progression Factor	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0				154.7	0.0	2.8	0.5	0.4	9.2	4.7	
Delay (s)	30.5				182.9	22.7	32.5	28.4	0.4	33.7	28.5	
Level of Service	C				F	C	C	C	A	C	C	
Approach Delay (s)	30.5				169.4			7.4			30.3	
Approach LOS	C				F			A			C	
Intersection Summary												
HCM 2000 Control Delay	57.2				HCM 2000 Level of Service				E			
HCM 2000 Volume to Capacity ratio	0.92											
Actuated Cycle Length (s)	70.3				Sum of lost time (s)				17.4			
Intersection Capacity Utilization	61.3%				ICU Level of Service				B			
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

5: Blanco Rd./Sanborn Rd. & Abbott St.

7/2/2014

Movement	EBL	EBT	EBC	WBL	WBT	WBC	NBL	NBT	NBC	SBL	SBT	SBC
Lane Configurations	↑	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑
Volume (vph)	183	263	196	206	309	121	166	373	237	160	576	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	4.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.0
Lane Util. Factor	0.91	0.91	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1550	3242	1502	1480	3200	1302	1770	3505	1530	1530	3471	1490
Flt Permitted	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1550	3242	1502	1480	3200	1302	1770	3505	1530	1530	3471	1490
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	215	309	231	242	364	142	195	439	279	188	678	231
RTOR Reduction (vph)	0	0	0	0	0	116	0	0	194	0	0	0
Lane Group Flow (vph)	170	354	231	196	410	26	195	439	85	188	678	231
Confl. Peds. (#/hr)	3			5			2			5		2
Confl. Bikes (#/hr)				2								
Heavy Vehicles (%)	6%	6%	6%	11%	7%	24%	2%	3%	4%	18%	4%	7%
Turn Type	Split	NA	Free	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			Free			3			2			Free
Actuated Green, G (s)	21.9	21.9	135.0	24.7	24.7	24.7	19.8	40.9	40.9	23.0	44.1	135.0
Effective Green, g (s)	21.9	21.9	135.0	24.7	24.7	24.7	19.8	40.9	40.9	23.0	44.1	135.0
Actuated g/C Ratio	0.16	0.16	1.00	0.18	0.18	0.18	0.15	0.30	0.30	0.17	0.33	1.00
Clearance Time (s)	5.6	5.6		6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	
Lane Grp Cap (vph)	251	525	1502	270	585	238	259	1061	463	260	1133	1490
v/s Ratio Prot	c0.11	0.11		c0.13	0.13		0.11	0.13		c0.12	c0.20	
v/s Ratio Perm			0.15			0.02			0.06			c0.16
v/c Ratio	0.68	0.67	0.15	0.73	0.70	0.11	0.75	0.41	0.18	0.72	0.60	0.16
Uniform Delay, d1	53.2	53.2	0.0	52.0	51.7	46.0	55.3	37.5	34.7	53.0	38.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	3.7	0.2	9.9	4.1	0.3	13.8	1.2	0.9	11.6	2.3	0.2
Delay (s)	60.9	56.9	0.2	61.9	55.7	46.3	69.0	38.7	35.6	64.6	40.4	0.2
Level of Service	E	E	A	E	E	D	E	D	D	E	D	A
Approach Delay (s)		40.5			55.6			44.2			36.1	
Approach LOS		D			E			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		43.3										
HCM 2000 Volume to Capacity ratio		0.69										
Actuated Cycle Length (s)		135.0										
Intersection Capacity Utilization		72.5%										
Analysis Period (min)		15										
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

1: Harkins Rd. & Abbott St.

7/2/2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑	↑↑		↑	↑↑	↑	↑	↑↑	↑	↑	↑↑	
Volume (vph)	140	350	36	48	447	267	202	304	96	73	144	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	5.6	5.6	5.6	5.6	5.6	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frт	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	
Flт Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1517	3156		1444	3282	1462	1583	3343	1362	1220	2818	
Flт Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1517	3156		1444	3282	1462	1583	3343	1362	1220	2818	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	380	39	52	486	290	220	330	104	79	157	196
RTOR Reduction (vph)	0	7	0	0	0	193	0	0	82	0	168	0
Lane Group Flow (vph)	152	412	0	52	486	97	220	330	22	79	185	0
Confl. Peds. (#/hr)	1		1			1	1			1		
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	19%	12%	19%	25%	10%	9%	14%	8%	17%	48%	18%	17%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5			1	6		3	8		7		
Permitted Phases		2			6	6		8	8		4	
Actuated Green, G (s)	10.0	34.9		5.0	29.9	29.9	13.5	18.5	18.5	7.7	12.7	
Effective Green, g (s)	10.0	34.9		5.0	29.9	29.9	13.5	18.5	18.5	7.7	12.7	
Actuated g/C Ratio	0.11	0.39		0.06	0.33	0.33	0.15	0.21	0.21	0.09	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	5.6	5.6	5.6	5.6	5.6	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	169	1233		80	1098	489	239	692	282	105	400	
v/s Ratio Prot	c0.10			0.04	c0.15		c0.14	c0.10		0.06		
v/s Ratio Perm		c0.13				0.07			0.02		0.07	
v/c Ratio	0.90	0.33		0.65	0.44	0.20	0.92	0.48	0.08	0.75	0.46	
Uniform Delay, d1	39.2	19.1		41.3	23.2	21.2	37.4	31.1	28.5	39.9	35.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	41.1	0.7		17.3	1.3	0.9	37.3	0.7	0.2	25.8	1.2	
Delay (s)	80.3	19.8		58.6	24.5	22.1	74.6	31.9	28.7	65.7	36.3	
Level of Service	F	B		E	C	C	E	C	C	E	D	
Approach Delay (s)		35.9			25.8			45.7			41.7	
Approach LOS		D			C			D			D	

## Intersection Summary

HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	23.2
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

2: Harkins Rd. & Schilling/Hanson St.

7/2/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	21	46	332	57	131	2	600	6	34	0	18	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	5.2	5.2				5.6	5.6		5.6	5.6
Lane Util. Factor	0.95	1.00	1.00	1.00				1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00				1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00				1.00	1.00		1.00	1.00
Fr <sub>t</sub>	1.00	0.85	1.00	1.00				1.00	0.85		1.00	0.85
Fl <sub>t</sub> Protected	0.98	1.00	0.95	1.00				0.95	1.00		1.00	1.00
Satd. Flow (prot)	3451	1475	1626	1806				1690	1422		1810	1295
Fl <sub>t</sub> Permitted	0.98	1.00	0.95	1.00				0.95	1.00		1.00	1.00
Satd. Flow (perm)	3451	1475	1626	1806				1690	1422		1810	1295
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	23	49	357	61	141	2	645	6	37	0	19	23
RTOR Reduction (vph)	0	0	294	0	0	0	0	0	21	0	0	22
Lane Group Flow (vph)	0	72	63	61	143	0	0	651	16	0	19	1
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	5%	2%	8%	11%	5%	0%	7%	17%	12%	33%	5%	23%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	2	2		6	6		7	7		8	8	
Permitted Phases		2							7			8
Actuated Green, G (s)	21.1	21.1	21.1	21.1				50.6	50.6		4.4	4.4
Effective Green, g (s)	21.1	21.1	21.1	21.1				50.6	50.6		4.4	4.4
Actuated g/C Ratio	0.18	0.18	0.18	0.18				0.43	0.43		0.04	0.04
Clearance Time (s)	5.2	5.2	5.2	5.2				5.6	5.6		5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0				3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	612	261	288	320				719	605		67	47
v/s Ratio Prot	0.02		0.04	c0.08				c0.39			c0.01	
v/s Ratio Perm		c0.04							0.01			0.00
v/c Ratio	0.12	0.24	0.21	0.45				0.91	0.03		0.28	0.02
Uniform Delay, d1	41.0	42.0	41.7	43.6				31.9	19.8		55.7	55.1
Progression Factor	1.00	1.00	1.00	1.00				1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	2.2	1.7	4.5				14.9	0.0		2.3	0.2
Delay (s)	41.4	44.2	43.4	48.1				46.8	19.8		58.0	55.3
Level of Service	D	D	D	D				D	B		E	E
Approach Delay (s)	43.7			46.7				45.3			56.5	
Approach LOS		D		D				D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay	45.4										D	
HCM 2000 Volume to Capacity ratio	0.63											
Actuated Cycle Length (s)	118.8										21.6	
Intersection Capacity Utilization	69.3%										C	
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

3: Airport Blvd. & Hanson St.

7/2/2014



Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	25	828	27	19	440	33
Sign Control	Free		Stop			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	26	872	28	20	463	35
Pedestrians	6		6			6
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None				None	
Median storage veh)						
Upstream signal (ft)	1012				1263	
pX, platoon unblocked			0.94			
vC, conflicting volume	504		1399	244		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	504		1393	244		
tC, single (s)	5.5		7.7	7.6		
tC, 2 stage (s)						
tF (s)	2.9		3.9	3.7		
p0 queue free %	96		65	97		
cM capacity (veh/h)	700		82	656		
Direction, Lane #	NW 1	NW 2	NE 1	SW 1	SW 2	SW 3
Volume Total	26	872	48	232	232	35
Volume Left	26	0	28	0	0	0
Volume Right	0	0	20	0	0	35
cSH	700	1700	128	1700	1700	1700
Volume to Capacity	0.04	0.51	0.38	0.14	0.14	0.02
Queue Length 95th (ft)	3	0	39	0	0	0
Control Delay (s)	10.3	0.0	49.1	0.0	0.0	0.0
Lane LOS	B		E			
Approach Delay (s)	0.3		49.1	0.0		
Approach LOS			E			
Intersection Summary						
Average Delay	1.8					
Intersection Capacity Utilization	63.7%	ICU Level of Service	B			
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis  
4: Airport Blvd. & Terven Ave.-Airport Blvd. & SB Ramps

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	141	75	186	110	72	110	45	804	114	230	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.2		4.2	3.7	5.3	4.0	3.7	5.3
Lane Util. Factor					1.00		1.00	1.00	1.00	1.00	1.00	0.95
Frbp, ped/bikes					1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes					1.00		1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.96		1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected					0.99		0.97	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)				1528			1665	1509	1444	1275	1509	1736
Flt Permitted				0.99			0.97	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)				1528			1665	1509	1444	1275	1509	1736
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	49	152	81	200	118	77	118	48	865	123	247	41
RTOR Reduction (vph)	0	20	0	0	0	66	0	0	0	0	20	0
Lane Group Flow (vph)	0	262	0	0	318	11	118	48	865	123	268	0
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	15%	6%	44%	11%	10%	7%	25%	49%	7%	4%	23%	32%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3				Free		
Actuated Green, G (s)		14.8			8.9	8.9	7.4	9.0	59.6	9.5	11.1	
Effective Green, g (s)		14.8			8.9	8.9	7.4	9.0	59.6	9.5	11.1	
Actuated g/C Ratio		0.25			0.15	0.15	0.12	0.15	1.00	0.16	0.19	
Clearance Time (s)		4.2			4.2	4.2	3.7	5.3		3.7	5.3	
Vehicle Extension (s)		3.0			3.0	3.0	3.5	3.0		3.0	3.0	
Lane Grp Cap (vph)		379			248	225	179	192	1509	276	528	
v/s Ratio Prot		0.17			c0.19		0.08	0.04		0.07	0.09	
v/s Ratio Perm						0.01			c0.57			
v/c Ratio		0.69			1.28	0.05	0.66	0.25	0.57	0.45	0.51	
Uniform Delay, d1		20.3			25.4	21.7	24.9	22.3	0.0	22.7	21.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.4			154.2	0.1	8.8	0.7	1.6	1.1	0.8	
Delay (s)		25.7			179.5	21.8	33.7	23.0	1.6	23.8	22.6	
Level of Service		C			F	C	C	C	A	C	C	
Approach Delay (s)		25.7			148.8			6.3			22.9	
Approach LOS		C			F			A			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		38.7			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.90										
Actuated Cycle Length (s)		59.6			Sum of lost time (s)			17.4				
Intersection Capacity Utilization		59.0%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

## HCM Signalized Intersection Capacity Analysis

5: Blanco Rd./Sanborn Rd. &amp; Abbott St.

7/2/2014

Movement	EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	262	243	189	275	457	237	214	668	190	129	478	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	4.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.0
Lane Util. Factor	0.91	0.91	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1579	3169	1562	1535	3165	1392	1719	3505	1472	1299	3539	1518
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1579	3169	1562	1535	3165	1392	1719	3505	1472	1299	3539	1518
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	282	261	203	296	491	255	230	718	204	139	514	181
RTOR Reduction (vph)	0	0	0	0	0	198	0	0	150	0	0	0
Lane Group Flow (vph)	178	365	203	255	532	57	230	718	54	139	514	181
Confl. Peds. (#/hr)	3		5	2			5		2			3
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	4%	9%	2%	7%	9%	16%	5%	3%	8%	39%	2%	5%
Turn Type	Split	NA	Free	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			Free			3			2			Free
Actuated Green, G (s)	20.3	20.3	115.1	25.6	25.6	25.6	17.0	30.2	30.2	14.5	27.7	115.1
Effective Green, g (s)	20.3	20.3	115.1	25.6	25.6	25.6	17.0	30.2	30.2	14.5	27.7	115.1
Actuated g/C Ratio	0.18	0.18	1.00	0.22	0.22	0.22	0.15	0.26	0.26	0.13	0.24	1.00
Clearance Time (s)	5.6	5.6		6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	
Lane Grp Cap (vph)	278	558	1562	341	703	309	253	919	386	163	851	1518
v/s Ratio Prot	0.11	c0.12		0.17	c0.17		c0.13	c0.20		0.11	0.15	
v/s Ratio Perm			c0.13			0.04			0.04			0.12
v/c Ratio	0.64	0.65	0.13	0.75	0.76	0.18	0.91	0.78	0.14	0.85	0.60	0.12
Uniform Delay, d1	44.0	44.1	0.0	41.7	41.8	36.3	48.3	39.4	32.5	49.3	38.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	3.1	0.2	9.2	5.0	0.4	34.7	6.6	0.7	35.1	3.2	0.2
Delay (s)	49.5	47.2	0.2	50.9	46.8	36.7	83.0	45.9	33.2	84.4	42.0	0.2
Level of Service	D	D	A	D	D	D	F	D	C	F	D	A
Approach Delay (s)		35.0			45.3			51.1			40.0	
Approach LOS		C			D			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		43.9			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.79										
Actuated Cycle Length (s)		115.1			Sum of lost time (s)			24.5				
Intersection Capacity Utilization		80.2%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

1: Harkins Rd. & Abbott St.

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑	↑↑↓		↑	↑↑	↑	↑	↑↑	↑	↑	↑↑↓	
Volume (vph)	156	245	149	94	428	97	94	183	85	123	258	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	5.6	5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1556	3112		1410	3252	1130	1805	2935	1262	1492	2936	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1556	3112		1410	3252	1130	1805	2935	1262	1492	2936	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	208	327	199	125	571	129	125	244	113	164	344	224
RTOR Reduction (vph)	0	88	0	0	0	91	0	0	90	0	115	0
Lane Group Flow (vph)	208	438	0	125	571	38	125	244	23	164	453	0
Confl. Peds. (#/hr)	1		1			1	1			1		
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	16%	10%	7%	28%	11%	41%	0%	23%	28%	21%	8%	26%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5			1	6		3	8		7		
Permitted Phases		2			6	6		8	8		4	
Actuated Green, G (s)	13.0	28.6		11.5	27.1	27.1	9.5	18.8	18.8	10.9	20.2	
Effective Green, g (s)	13.0	28.6		11.5	27.1	27.1	9.5	18.8	18.8	10.9	20.2	
Actuated g/C Ratio	0.14	0.31		0.12	0.29	0.29	0.10	0.20	0.20	0.12	0.22	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	5.6	5.6	5.6	5.6	5.6	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	217	957		174	947	329	184	593	255	174	637	
v/s Ratio Prot	c0.13			0.09	c0.18		0.07	0.08		c0.11		
v/s Ratio Perm		0.14				0.03			0.02		c0.15	
v/c Ratio	0.96	0.46		0.72	0.60	0.11	0.68	0.41	0.09	0.94	0.71	
Uniform Delay, d1	39.7	26.0		39.2	28.3	24.2	40.3	32.3	30.1	40.7	33.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	48.8	1.6		13.2	2.8	0.7	9.6	0.6	0.2	51.4	4.0	
Delay (s)	88.5	27.5		52.4	31.2	24.9	49.8	32.9	30.4	92.1	37.7	
Level of Service	F	C		D	C	C	D	C	C	F	D	
Approach Delay (s)		44.8			33.4			36.7			49.9	
Approach LOS		D			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		41.4			HCM 2000 Level of Service					D		
HCM 2000 Volume to Capacity ratio		0.76										
Actuated Cycle Length (s)		93.0			Sum of lost time (s)					23.2		
Intersection Capacity Utilization		67.4%			ICU Level of Service					C		
Analysis Period (min)		15										
c Critical Lane Group												

## HCM Signalized Intersection Capacity Analysis

2: Harkins Rd. &amp; Schilling/Hansen St.

7/2/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	318	468	48	67	6	191	19	215	4	10	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	5.2	5.2				5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	0.95	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00				1.00	0.99	1.00	0.99	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	1.00	0.85	1.00	0.99				1.00	0.85	1.00	0.85	0.85
Fl <sub>t</sub> Protected	1.00	1.00	0.95	1.00				0.96	1.00	0.99	1.00	1.00
Satd. Flow (prot)	3370	1462	1492	1580				1680	1476	1634	1328	
Fl <sub>t</sub> Permitted	1.00	1.00	0.95	1.00				0.96	1.00	0.99	1.00	
Satd. Flow (perm)	3370	1462	1492	1580				1680	1476	1634	1328	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	41	430	632	65	91	8	258	26	291	5	14	20
RTOR Reduction (vph)	0	0	475	0	3	0	0	0	229	0	0	19
Lane Group Flow (vph)	0	471	157	65	96	0	0	284	62	0	19	1
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	3%	7%	9%	21%	18%	25%	9%	0%	8%	0%	20%	20%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	2	2		6	6		7	7		8	8	
Permitted Phases			2						7			8
Actuated Green, G (s)	21.6	21.6	21.2	21.2				18.4	18.4		4.1	4.1
Effective Green, g (s)	21.6	21.6	21.2	21.2				18.4	18.4		4.1	4.1
Actuated g/C Ratio	0.25	0.25	0.24	0.24				0.21	0.21		0.05	0.05
Clearance Time (s)	5.2	5.2	5.2	5.2				5.6	5.6		5.6	5.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0				3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	837	363	363	385				355	312		77	62
v/s Ratio Prot	c0.14		0.04	c0.06				c0.17			c0.01	
v/s Ratio Perm			0.11						0.04			0.00
v/c Ratio	0.56	0.43	0.18	0.25				0.80	0.20		0.25	0.02
Uniform Delay, d1	28.5	27.5	26.0	26.4				32.5	28.2		39.9	39.5
Progression Factor	1.00	1.00	1.00	1.00				1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	3.7	1.1	1.5				12.2	0.3		1.7	0.1
Delay (s)	31.3	31.2	27.0	28.0				44.7	28.5		41.6	39.6
Level of Service	C	C	C	C				D	C		D	D
Approach Delay (s)	31.2			27.6				36.5			40.6	
Approach LOS	C			C				D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay	32.7									C		
HCM 2000 Volume to Capacity ratio	0.51											
Actuated Cycle Length (s)	86.9								21.6			
Intersection Capacity Utilization	66.6%								C			
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

3: Airport Blvd. & Hansen St.

7/2/2014



Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	12	296	13	12	857	13
Sign Control	Free		Stop			Free
Grade	0%		0%			0%
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	15	379	17	15	1099	17
Pedestrians	6		6			6
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None				None	
Median storage (veh)						
Upstream signal (ft)	1012				1263	
pX, platoon unblocked	0.82		0.82	0.82		
vC, conflicting volume	1121		1521	561		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	711		1198	29		
tC, single (s)	5.1		8.4	8.2		
tC, 2 stage (s)						
tF (s)	2.7		4.3	4.0		
p0 queue free %	97		78	98		
cM capacity (veh/h)	513		77	701		
Direction, Lane #	NW 1	NW 2	NE 1	SW 1	SW 2	SW 3
Volume Total	15	379	32	549	549	17
Volume Left	15	0	17	0	0	0
Volume Right	0	0	15	0	0	17
cSH	513	1700	134	1700	1700	1700
Volume to Capacity	0.03	0.22	0.24	0.32	0.32	0.01
Queue Length 95th (ft)	2	0	22	0	0	0
Control Delay (s)	12.2	0.0	40.0	0.0	0.0	0.0
Lane LOS	B		E			
Approach Delay (s)	0.5		40.0	0.0		
Approach LOS			E			
Intersection Summary						
Average Delay	1.0					
Intersection Capacity Utilization	42.9%	ICU Level of Service	A			
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis  
4: Airport Blvd. & Terven Ave.-Airport Blvd. & SB Ramps

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	80	79	282	103	30	52	19	249	262	604	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2				4.2	4.2	3.7	5.3	4.0	3.7	5.3	
Lane Util. Factor	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95
Frpb, ped/bikes	0.99				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.94				1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.98
Fl <sub>t</sub> Protected	1.00				0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1483				1634	1509	1378	1195	1302	1736	3178	
Fl <sub>t</sub> Permitted	1.00				0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1483				1634	1509	1378	1195	1302	1736	3178	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	21	105	104	371	136	39	68	25	328	345	795	101
RTOR Reduction (vph)	0	34	0	0	0	31	0	0	0	0	11	0
Lane Group Flow (vph)	0	196	0	0	507	8	68	25	328	345	885	0
Confl. Bikes (#/hr)					1							
Heavy Vehicles (%)	25%	5%	32%	13%	10%	7%	31%	59%	24%	4%	12%	9%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases					3				Free			
Actuated Green, G (s)	15.1				17.9	17.9	7.3	13.4	83.9	20.1	26.2	
Effective Green, g (s)	15.1				17.9	17.9	7.3	13.4	83.9	20.1	26.2	
Actuated g/C Ratio	0.18				0.21	0.21	0.09	0.16	1.00	0.24	0.31	
Clearance Time (s)	4.2				4.2	4.2	3.7	5.3		3.7	5.3	
Vehicle Extension (s)	3.0				3.0	3.0	3.5	3.0		3.0	3.0	
Lane Grp Cap (vph)	266				348	321	119	190	1302	415	992	
v/s Ratio Prot	c0.13				c0.31		0.05	0.02		c0.20	c0.28	
v/s Ratio Perm						0.01			0.25			
v/c Ratio	0.74				1.46	0.03	0.57	0.13	0.25	0.83	0.89	
Uniform Delay, d1	32.5				33.0	26.1	36.8	30.3	0.0	30.3	27.5	
Progression Factor	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.1				221.0	0.0	7.0	0.3	0.5	13.2	10.2	
Delay (s)	42.6				254.0	26.1	43.8	30.6	0.5	43.5	37.7	
Level of Service	D				F	C	D	C	A	D	D	
Approach Delay (s)	42.6				237.7			9.2			39.3	
Approach LOS	D				F			A			D	
Intersection Summary												
HCM 2000 Control Delay	78.9				HCM 2000 Level of Service				E			
HCM 2000 Volume to Capacity ratio	1.02											
Actuated Cycle Length (s)	83.9				Sum of lost time (s)				17.4			
Intersection Capacity Utilization	70.7%				ICU Level of Service				C			
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

5: Blanco Rd./Sanborn Rd. & Abbott St.

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗	↑ ↗
Volume (vph)	183	280	196	208	311	121	166	373	253	173	577	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	4.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.0
Lane Util. Factor	0.91	0.91	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl <sub>t</sub> Protected	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1550	3245	1502	1480	3200	1302	1770	3505	1530	1530	3471	1490
Fl <sub>t</sub> Permitted	0.95	0.99	1.00	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1550	3245	1502	1480	3200	1302	1770	3505	1530	1530	3471	1490
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	215	329	231	245	366	142	195	439	298	204	679	231
RTOR Reduction (vph)	0	0	0	0	0	114	0	0	223	0	0	0
Lane Group Flow (vph)	176	368	231	198	413	28	195	439	75	204	679	231
Confl. Peds. (#/hr)	3		5	2			5		2			3
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	6%	6%	6%	11%	7%	24%	2%	3%	4%	18%	4%	7%
Turn Type	Split	NA	Free	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			Free			3			2			Free
Actuated Green, G (s)	19.8	19.8	111.1	21.9	21.9	21.9	14.9	28.0	28.0	16.9	30.0	111.1
Effective Green, g (s)	19.8	19.8	111.1	21.9	21.9	21.9	14.9	28.0	28.0	16.9	30.0	111.1
Actuated g/C Ratio	0.18	0.18	1.00	0.20	0.20	0.20	0.13	0.25	0.25	0.15	0.27	1.00
Clearance Time (s)	5.6	5.6		6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	
Lane Grp Cap (vph)	276	578	1502	291	630	256	237	883	385	232	937	1490
v/s Ratio Prot	c0.11	0.11		c0.13	0.13		0.11	0.13		c0.13	c0.20	
v/s Ratio Perm			0.15			0.02			0.05			c0.16
v/c Ratio	0.64	0.64	0.15	0.68	0.66	0.11	0.82	0.50	0.20	0.88	0.72	0.16
Uniform Delay, d1	42.3	42.3	0.0	41.4	41.1	36.6	46.8	35.5	32.7	46.1	36.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	2.6	0.2	6.9	2.7	0.3	22.2	2.0	1.1	31.1	4.9	0.2
Delay (s)	47.7	44.9	0.2	48.3	43.8	36.9	69.0	37.5	33.8	77.2	41.7	0.2
Level of Service	D	D	A	D	D	D	E	D	C	E	D	A
Approach Delay (s)		32.2			43.7			42.9			39.6	
Approach LOS		C			D			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		39.7			HCM 2000 Level of Service				D			
HCM 2000 Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		111.1			Sum of lost time (s)				24.5			
Intersection Capacity Utilization		73.2%			ICU Level of Service				D			
Analysis Period (min)		15										
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

1: Harkins Rd. & Abbott St.

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑	↑↑↓		↑	↑↑	↑	↑	↑↑	↑	↑	↑↑↓	
Volume (vph)	170	350	36	48	447	285	202	324	96	107	205	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	5.6	5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1517	3156		1444	3282	1462	1583	3343	1362	1220	2828	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1517	3156		1444	3282	1462	1583	3343	1362	1220	2828	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	380	39	52	486	310	220	352	104	116	223	254
RTOR Reduction (vph)	0	7	0	0	0	208	0	0	85	0	214	0
Lane Group Flow (vph)	185	412	0	52	486	102	220	352	19	116	263	0
Confl. Peds. (#/hr)	1		1			1	1			1		
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	19%	12%	19%	25%	10%	9%	14%	8%	17%	48%	18%	17%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5			1	6		3	8		7		
Permitted Phases		2			6	6		8	8		4	
Actuated Green, G (s)	11.0	36.0		5.0	30.0	30.0	12.4	16.4	16.4	10.5	14.5	
Effective Green, g (s)	11.0	36.0		5.0	30.0	30.0	12.4	16.4	16.4	10.5	14.5	
Actuated g/C Ratio	0.12	0.40		0.05	0.33	0.33	0.14	0.18	0.18	0.12	0.16	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	5.6	5.6	5.6	5.6	5.6	
Vehicle Extension (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	183	1247		79	1080	481	215	601	245	140	450	
v/s Ratio Prot	c0.12			0.04	c0.15		c0.14	c0.11		0.10		
v/s Ratio Perm		c0.13				0.07			0.01		0.09	
v/c Ratio	1.01	0.33		0.66	0.45	0.21	1.02	0.59	0.08	0.83	0.59	
Uniform Delay, d1	40.0	19.2		42.2	24.1	22.0	39.3	34.2	31.1	39.4	35.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	69.4	0.7		18.1	1.4	1.0	67.5	1.7	0.2	31.4	2.3	
Delay (s)	109.4	19.9		60.3	25.4	23.0	106.9	36.0	31.2	70.9	37.8	
Level of Service	F	B		E	C	C	F	D	C	E	D	
Approach Delay (s)		47.3			26.7			58.3			44.3	
Approach LOS		D			C			E			D	
Intersection Summary												
HCM 2000 Control Delay		43.0										D
HCM 2000 Volume to Capacity ratio		0.67										
Actuated Cycle Length (s)		91.1										23.2
Intersection Capacity Utilization		74.8%										D
Analysis Period (min)		15										
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

2: Harkins Rd. & Schilling/Hanson St.

7/2/2014

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	21	164	332	206	398	6	600	6	102	0	18	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	5.2	5.2				5.6	5.6		5.6	5.6
Lane Util. Factor	0.95	1.00	1.00	1.00				1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00				1.00	0.99		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00				1.00	1.00		1.00	1.00
Fr <sub>t</sub>	1.00	0.85	1.00	1.00				1.00	0.85		1.00	0.85
Fl <sub>t</sub> Protected	0.99	1.00	0.95	1.00				0.95	1.00		1.00	1.00
Satd. Flow (prot)	3507	1475	1626	1806				1690	1422		1810	1295
Fl <sub>t</sub> Permitted	0.99	1.00	0.95	1.00				0.95	1.00		1.00	1.00
Satd. Flow (perm)	3507	1475	1626	1806				1690	1422		1810	1295
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	23	176	357	222	428	6	645	6	110	0	19	23
RTOR Reduction (vph)	0	0	295	0	0	0	0	0	60	0	0	22
Lane Group Flow (vph)	0	199	62	222	434	0	0	651	50	0	19	1
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	5%	2%	8%	11%	5%	0%	7%	17%	12%	33%	5%	23%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	2	2		6	6		7	7		8	8	
Permitted Phases			2						7			8
Actuated Green, G (s)	22.3	22.3	30.9	30.9			49.5	49.5		4.4	4.4	
Effective Green, g (s)	22.3	22.3	30.9	30.9			49.5	49.5		4.4	4.4	
Actuated g/C Ratio	0.17	0.17	0.24	0.24			0.38	0.38		0.03	0.03	
Clearance Time (s)	5.2	5.2	5.2	5.2			5.6	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	607	255	390	433			650	546		61	44	
v/s Ratio Prot	c0.06		0.14	c0.24			c0.39			c0.01		
v/s Ratio Perm			0.04					0.03			0.00	
v/c Ratio	0.33	0.24	0.57	1.00			1.00	0.09		0.31	0.02	
Uniform Delay, d1	46.6	45.9	43.0	48.9			39.6	25.3		60.7	60.1	
Progression Factor	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	2.2	5.9	43.8			35.7	0.1		2.9	0.2	
Delay (s)	48.1	48.2	49.0	92.7			75.3	25.3		63.6	60.2	
Level of Service	D	D	D	F			E	C		E	E	
Approach Delay (s)	48.1			77.9			68.1			61.7		
Approach LOS	D			E			E			E		
<b>Intersection Summary</b>												
HCM 2000 Control Delay	65.6	HCM 2000 Level of Service						E				
HCM 2000 Volume to Capacity ratio	0.83											
Actuated Cycle Length (s)	128.7	Sum of lost time (s)						21.6				
Intersection Capacity Utilization	92.4%	ICU Level of Service						F				
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Unsignalized Intersection Capacity Analysis

3: Airport Blvd. & Hanson St.

7/2/2014



Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	31	1089	27	23	554	33
Sign Control	Free		Stop			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	33	1146	28	24	583	35
Pedestrians	6		6			6
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None				None	
Median storage veh)						
Upstream signal (ft)	1012				1263	
pX, platoon unblocked			0.77			
vC, conflicting volume	624		1807	304		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	624		1898	304		
tC, single (s)	5.5		7.7	7.6		
tC, 2 stage (s)						
tF (s)	2.9		3.9	3.7		
p0 queue free %	95		0	96		
cM capacity (veh/h)	610		27	595		
Direction, Lane #	NW 1	NW 2	NE 1	SW 1	SW 2	SW 3
Volume Total	33	1146	53	292	292	35
Volume Left	33	0	28	0	0	0
Volume Right	0	0	24	0	0	35
cSH	610	1700	49	1700	1700	1700
Volume to Capacity	0.05	0.67	1.08	0.17	0.17	0.02
Queue Length 95th (ft)	4	0	117	0	0	0
Control Delay (s)	11.2	0.0	288.0	0.0	0.0	0.0
Lane LOS	B		F			
Approach Delay (s)	0.3		288.0	0.0		
Approach LOS			F			
Intersection Summary						
Average Delay	8.4					
Intersection Capacity Utilization	79.9%	ICU Level of Service	D			
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis  
4: Airport Blvd. & Terven Ave.-Airport Blvd. & SB Ramps

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	141	92	230	110	72	140	59	1021	114	283	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2				4.2	4.2	3.7	5.3	4.0	3.7	5.3	
Lane Util. Factor	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95
Frpb, ped/bikes	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>	0.96				1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.98
Fl <sub>t</sub> Protected	0.99				0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1500				1661	1509	1444	1275	1509	1736	2853	
Fl <sub>t</sub> Permitted	0.99				0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1500				1661	1509	1444	1275	1509	1736	2853	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	49	152	99	247	118	77	151	63	1098	123	304	41
RTOR Reduction (vph)	0	22	0	0	0	65	0	0	0	0	15	0
Lane Group Flow (vph)	0	278	0	0	365	12	151	63	1098	123	330	0
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	15%	6%	44%	11%	10%	7%	25%	49%	7%	4%	23%	32%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3				Free		
Actuated Green, G (s)	16.4				10.9	10.9	9.5	12.7	67.2	9.8	13.0	
Effective Green, g (s)	16.4				10.9	10.9	9.5	12.7	67.2	9.8	13.0	
Actuated g/C Ratio	0.24				0.16	0.16	0.14	0.19	1.00	0.15	0.19	
Clearance Time (s)	4.2				4.2	4.2	3.7	5.3		3.7	5.3	
Vehicle Extension (s)	3.0				3.0	3.0	3.5	3.0		3.0	3.0	
Lane Grp Cap (vph)	366				269	244	204	240	1509	253	551	
v/s Ratio Prot	0.19				c0.22		0.10	0.05		0.07	0.12	
v/s Ratio Perm						0.01				c0.73		
v/c Ratio	0.76				1.36	0.05	0.74	0.26	0.73	0.49	0.60	
Uniform Delay, d1	23.6				28.2	23.8	27.7	23.3	0.0	26.4	24.7	
Progression Factor	1.00				1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.8				182.9	0.1	13.8	0.6	3.1	1.5	1.8	
Delay (s)	32.3				211.1	23.9	41.5	23.8	3.1	27.9	26.5	
Level of Service	C				F	C	D	C	A	C	C	
Approach Delay (s)	32.3				178.5				8.5		26.9	
Approach LOS	C				F				A		C	
Intersection Summary												
HCM 2000 Control Delay	44.5				HCM 2000 Level of Service				D			
HCM 2000 Volume to Capacity ratio	1.06											
Actuated Cycle Length (s)	67.2				Sum of lost time (s)				17.4			
Intersection Capacity Utilization	65.6%				ICU Level of Service				C			
Analysis Period (min)	15											
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

5: Blanco Rd./Sanborn Rd. & Abbott St.

7/2/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑
Volume (vph)	262	270	189	289	482	252	214	668	193	129	483	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	4.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.0
Lane Util. Factor	0.91	0.91	1.00	0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1579	3170	1562	1535	3165	1392	1719	3505	1472	1299	3539	1518
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1579	3170	1562	1535	3165	1392	1719	3505	1472	1299	3539	1518
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	282	290	203	311	518	271	230	718	208	139	519	186
RTOR Reduction (vph)	0	0	0	0	0	210	0	0	154	0	0	0
Lane Group Flow (vph)	186	386	203	267	562	61	230	718	54	139	519	186
Confl. Peds. (#/hr)	3		5	2			5		2			3
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	4%	9%	2%	7%	9%	16%	5%	3%	8%	39%	2%	5%
Turn Type	Split	NA	Free	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			Free			3			2			Free
Actuated Green, G (s)	21.1	21.1	116.7	26.4	26.4	26.4	17.0	30.2	30.2	14.5	27.7	116.7
Effective Green, g (s)	21.1	21.1	116.7	26.4	26.4	26.4	17.0	30.2	30.2	14.5	27.7	116.7
Actuated g/C Ratio	0.18	0.18	1.00	0.23	0.23	0.23	0.15	0.26	0.26	0.12	0.24	1.00
Clearance Time (s)	5.6	5.6		6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	
Lane Grp Cap (vph)	285	573	1562	347	715	314	250	907	380	161	840	1518
v/s Ratio Prot	0.12	c0.12		0.17	c0.18		c0.13	c0.20		0.11	0.15	
v/s Ratio Perm			c0.13			0.04			0.04			0.12
v/c Ratio	0.65	0.67	0.13	0.77	0.79	0.20	0.92	0.79	0.14	0.86	0.62	0.12
Uniform Delay, d1	44.4	44.6	0.0	42.3	42.5	36.6	49.2	40.3	33.3	50.1	39.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	3.4	0.2	10.4	6.0	0.4	37.4	7.0	0.8	37.4	3.4	0.2
Delay (s)	50.2	48.0	0.2	52.7	48.5	37.0	86.6	47.3	34.1	87.5	43.2	0.2
Level of Service	D	D	A	D	D	D	F	D	C	F	D	A
Approach Delay (s)		36.0			46.7			52.7			41.0	
Approach LOS		D			D			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		45.1			HCM 2000 Level of Service				D			
HCM 2000 Volume to Capacity ratio		0.81										
Actuated Cycle Length (s)		116.7			Sum of lost time (s)				24.5			
Intersection Capacity Utilization		81.3%			ICU Level of Service				D			
Analysis Period (min)		15										
c Critical Lane Group												