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Keith Higgins

Traffic Engineer

**HILDEBRAND & SONS
STORAGE YARD
TRAFFIC ANALYSIS REPORT**

FINAL REPORT

MONTEREY COUNTY, CALIFORNIA

Prepared for
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Salinas, California

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November 26, 2018

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Hildebrand Storage Yard Traffic Impact Analysis

1 INTRODUCTION

This report presents the findings of the traffic impact analysis for the Hildebrand & Sons Trucking Storage Yard located on a vacant 13.66-acre site at 219 Harrison Road just south of Martines Road in Monterey County, CA. The project site is about one mile north of the City of Salinas, on the west side of Harrison Road. The locations of the project site and study area are indicated in **Exhibit 1**. A conceptual site plan is shown in **Exhibit 2**.

According to the "Proposed General Development Plan," the project is proposed to include storage of materials and vehicles primarily for persons engaged in construction. No retail trade or offices or restrooms are proposed.

The following is a quote from the "Proposed Development Plan (Rev. 2) for the Hildebrand & Sons Trucking, Inc. property, 219 Harrison Road, Hwy 101, Salinas, CA (PLN170260). "The requested uses for the project site include storage of non-combustible construction equipment & materials such as, agricultural irrigation pipes, k-rails, night guard shack, lumber and hay storage, RV/semi-trailer, truck, and car parking. With regards to RV/semi-trailer, truck and car storage, there will be no dismantling of RV/semi-trailer or truck and car onsite repairs. It is the applicant's intent to allow the temporary storage of RV's, semi-trailers, trucks and cars. Specifically, as it relates to RV/semi-trailer, semi-truck or car parking, the applicant anticipates these items will remain onsite for approximately 8-12 weeks. With respect to the storing of RV's and semi-trailers, these vehicles will be stored for a few months on end, approximately 6-8 months at a time. The property will be used as a simple storage yard. No retail trade or offices or restrooms are proposed (see MCC 21.06.1005)."

The applicant also seeks permission to utilize portions of the property for similar construction storage operated by construction companies or individual contractors who will rent/lease space for their equipment and storage needs. The intent of the applicant is to have a suitable location for a service center with easy and safe access to Highway 101 that is compatible with surrounding land uses. No employees will be located at the site. Contractor tenants will have short term leases. The maximum number of service center spaces will be ten (10) that will be available for lease and storage. The hours of operation are proposed to be Monday through Saturday from 5:00 AM to 4:30 PM.

In 2012, Hildebrand & Sons Trucking, Inc. along with Granite Construction acquired a Use Permit (PLN120334) for a temporary equipment/materials yard, portable job trailer and a concrete batch plant at the project site. The use of the site at that time was for construction support and staging operations for the Caltrans Prunedale Improvement Project (PIP). The permit allowed for the site to be used as a construction storage yard during construction of the highway improvements. There is no record of any complaints regarding its operation during the PIP project, which involved the construction of major highway improvements along Highway 101 including interchanges at Sala Road and several other locations in North Monterey County.

The project site has continued to be operated as a contractor storage yard. However, no credit can be given for traffic currently generated by the site.

Hildebrand Storage Yard Traffic Impact Analysis

- **Scope of Work**

Based on a discussion with Raul Martinez, Monterey County Public Works Department, the study consists of the following tasks. The “Alderete H2A Agricultural Employee Housing Project Traffic Impact Analysis – Administrative Draft Report,” December 7, 2017, (Alderete Study) is used as a reference document for off-site impact analysis. It has been submitted to the County and is available as a public document. The Alderete project is proposed to be located at 449 Harrison Road, approximately one-third of a mile north of the project site.

The study analyzes traffic conditions under the following development scenarios:

1. Existing Conditions – Weekday AM and PM peak hour traffic counts were taken at the project driveway intersection with Harrison Road for three weekdays to determine the existing driveway traffic operations with the current partial occupancy of the project. The counts are also used to estimate trip generation for the buildout of the project. Existing traffic conditions are referenced from the Alderete report for the following study intersections.
 - a. Harrison Road / Sala Road
 - b. Harrison Road / Martines Road

The study intersections are also analyzed for the following additional development scenarios.

2. Existing Plus Project Conditions
3. Cumulative Conditions
4. Cumulative Plus Project Conditions

1.1 Traffic Operation Evaluation Methodologies

Intersection and road segment traffic operations were evaluated based on the Level of Service (LOS) concept, and the LOS standard adopted by the jurisdiction in which the facility is located. LOS is a qualitative description of an intersection’s operation, ranging from LOS A to LOS F. Level of service “A” represents free flow un-congested traffic conditions. Level of service “F” represents highly congested traffic conditions with what is commonly considered unacceptable delay to vehicles. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes.

Operations for the study intersections were evaluated using the Synchro analysis software based on Highway Capacity Manual (HCM) 2010 methodologies for signalized, one-way (side street) stop and all-way stop controlled intersections. When using the HCM 2010 methods for the analysis of signalized and all-way stop controlled intersections, the average overall delay at the intersection is correlated to a level of service. At one-way stop-controlled intersections, only the side street approach must stop before entering the intersection; traffic on the major street can pass freely through the intersection. The side-street delay (and corresponding level of service) is therefore the criteria used to evaluate the intersection. LOS descriptions for signalized, one-way, and all-way stop controlled intersections are included in **Appendices A-1, A-2, and A-3**, respectively.

Operations for the US 101 mainline segments were evaluated using the HCS 2010 analysis software based on HCM 2010 methodologies for basic freeway segments. LOS for freeway segments is based on density in passenger cars per mile per lane (pc/mi/ln). The LOS criteria for freeway segments are included in **Appendix A-4**. Operations of the US 101 on- and off-ramps at the Sala Road interchange were evaluated using threshold volumes based on HCM 2010 methodologies. The peak hour threshold volumes are included in **Appendix A-5**.

Hildebrand Storage Yard Traffic Impact Analysis

1.2 LOS Standards and Criterial for Project Impacts

According to California Environmental Quality Act (CEQA) guidelines, a project may have a significant effect on the environment if it would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. In accordance with CEQA, impact criteria have been applied to determine if the project-specific increase in traffic is substantial in relation to the existing traffic load and capacity of the street system.

Monterey County

The study intersections are under the jurisdiction of Monterey County. The Monterey County level of service standard is LOS D. Based on Monterey County guidelines:

An 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, C, or D degrades to E or F. For intersections already operating at unacceptable level 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.

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

- An impact would occur if an all-way stop controlled or roundabout controlled intersection, based on the average delay, operates at LOS F or any traffic signal warrant is met.
- An impact would occur if a two-way stop-controlled intersection, based on the worst approach delay, operates at LOS F or any traffic signal warrant is met.

Caltrans

No study intersection or segments are under the jurisdiction of Caltrans. However, the Harrison Road / Sala Road intersection is immediately adjacent to the US 101 right of way. Per the *Caltrans Guide for Preparation of Traffic Impact Studies* publication, "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained." MOE refers to the measures of effectiveness which are used to describe the measures best suited for analyzing State highway facilities.

Caltrans perceives an impact when there is any degradation in the performance measure below the cusp of C/D. If a facility is currently operating at or below LOS D, then any trips added represent a potential impact, and the performance measure should be brought back to predevelopment conditions. While a single trip added to a degraded facility is not usually reflected in the performance measure, Caltrans reserves the ability to consider a single trip as an impact.

1.3 Funding for Transportation Improvements

TAMC Fee

The Transportation Agency for Monterey County (TAMC) and its member jurisdictions have adopted a county-wide, regional impact fee to cover the costs for studies and construction of many improvements

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throughout Monterey County. This impact fee, which went into effect on August 27, 2008, is applied to all new development within Monterey County. The governing document for the fee is the Regional Impact Fee Nexus Study Update (March 26, 2008) prepared by Kimley-Horn Associates, Inc. The Regional Impact Fee Nexus Study Update was updated again in 2013.

Monterey County Traffic Impact Fee

In August 2006, the City of Salinas and the County of Monterey entered into an agreement known as the Greater Salinas Area Memorandum of Understanding (MOU).

Item #9 in the MOU states “City and County agree to support fees and taxes needed to mitigate the collective impact of new and existing development on the regional transportation system to the extent that the fees and taxes reflect the overall financing program adopted by TAMC”.

Item #10 in the MOU states that “City and County agree that the County will develop a County-wide Traffic Impact fee program for the improvement of major County roads in accordance with the County adopted General Plan.” The County will consult with TAMC and Monterey County cities in the development of the County fee program. In order to prevent the need for an ad hoc traffic impact fee on developments within the City of Salinas, the County’s traffic impact fee program will make the Greater Salinas Area a priority, and the County will attempt to complete a nexus study and hearing process within 18 months of adoption of the County General Plan.

The 2010 Monterey County General Plan, which was adopted October 26, 2010, provides policies to enact the policy framework provided by the MOU. Specifically, the General Plan includes the following policies:

Policy C-1.8 Development proposed in cities and adjacent counties shall be carefully reviewed to assess the proposed development’s impact on the County’s circulation system. The County, in consultation with TAMC and Monterey County cities shall, within 18 months of adoption of the General Plan, develop a County Traffic Impact fee that addresses Tier 2 impacts of development in cities and unincorporated areas. From the time of adoption of the General Plan until the time of adoption of a County Traffic Impact Fee, the County shall impose an ad hoc fee on its applicants based upon a fair share traffic impact fee study.

Policy C-1.9 All available public and private sources shall be used for the funding of road and highway development, improvement and maintenance.

Policy C-1.10 The County, in coordination with TAMC and other affected agencies, shall continue efforts to improve traffic congestion at critical locations.

Policy C-1.11 In addition to the County Traffic Impact Fee established in Policy C-1.8, the County shall require new development to pay a Regional Traffic Impact Fee developed collaboratively between TAMC, the County, and other local and state agencies to ensure a funding mechanism for regional transportation improvements mitigating Traffic Tier 3 impacts.

To date, a county-wide traffic fee program has yet to be adopted. However, the County has been assessing fees for the Countywide Traffic Impact fee on an ad hoc basis per the fee program’s draft fee schedule.

2 EXISTING CONDITIONS

This chapter presents a description of the existing road network, existing traffic volumes, and traffic operations within the study area under existing traffic conditions.

2.1 Existing Road Network

The key roadways the project vicinity include Harrison Road and Sala Road. These facilities are described below:

- **Harrison Road** is a two-lane north-south County road that extends between Espinosa Road-Russell Road and Damian Way in Monterey County. Harrison Road provides direct access to the project site, north of Sala Road. The Average Daily Traffic (ADT) on Harrison Road is approximately 2,700 north of Sala Road and 9,000 between Sala Road and Russell -Espinosa Road.
- **Sala Road** is a four-lane east-west road located north of the project site that provides access from Harrison Road to the US 101 / Sala Road interchange. Its intersection with Harrison Road is under Monterey County jurisdiction. The interchange is under Caltrans jurisdiction. The ADT on Sala Road is approximately 8,500.

2.2 Existing Transit Service

The primary public transit service in Monterey County is provided by Monterey-Salinas Transit (MST). All MST buses are wheelchair accessible and equipped with bike racks. MST bus route 29 travels along Harrison Road and provides weekday service between the Salinas Transit Center and Watsonville with two-hour headways. Bus stops for northbound and southbound buses are located on Harrison Road south of Sala Road.

2.3 Existing Bicycle and Pedestrian Facilities

The City of Salinas Bikeways Plan (2002) and Transportation Agency for Monterey County (TAMC) Bicycle and Pedestrian Master Plan (2011) identify existing and proposed bicycle facilities that provide access to major employers, shopping centers and schools. Consistent with State and Federal designations, there are three basic types of bicycle facilities. Each type is described below:

1. **Bike path (Class I)** - A separate right-of-way designed for the exclusive use of cyclists and pedestrians, with minimal crossings for motorists.
2. **Bike lane (Class II)** - A lane on a regular roadway, separated from the motorized vehicle right-of-way by paint striping, designated for the exclusive or semi-exclusive use of bicycles. Bike lanes allow one-way bike travel. Through travel by motor vehicles or pedestrians is prohibited but crossing by pedestrians and motorists is permitted.
3. **Bike route (Class III)** - Provides shared use of the roadway with motorists, designated by signs or permanent markings.

There are currently no designated bicycle facilities provided near the proposed project. However, Class II bike lanes are proposed for Harrison Road, Espinosa Road and Russell Road in the City of Salinas Bikeways Plan and the TAMC Bicycle and Pedestrian Master Plan. There are currently no pedestrian facilities provided near the project site.

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2.4 Existing Intersection Operations

Weekday AM and PM peak hour turning movement counts were collected at the project driveway intersection on Tuesday, Wednesday and Thursday, May 8 – 10, 2018. The off-site study intersections were counted on November 7, 2017. Existing peak hour traffic volumes at the study intersections are presented in **Exhibit 3**. The raw intersection traffic counts at the project driveway are included as **Appendix B**.

Level of service analyses were conducted for the study intersections. Based on the analysis, the study intersections operate at acceptable levels of service under Existing conditions and no improvements are recommended. Intersection levels of service are summarized in **Exhibit 4**. Intersection LOS calculation worksheets are included as **Appendix C**.

A left turn lane warrant analysis for northbound Harrison Road at the project driveway is included as **Appendix D**. A left turn lane is currently not warranted with traffic generated by existing uses at the site.

3 EXISTING PLUS PROJECT CONDITIONS

3.1 Project Trip Generation, Distribution, and Assignment

The project currently is used by Granite Construction Company as a materials storage yard (primarily for a large quantity of k-rails - temporary concrete barriers used on road construction projects) and Extreme Towing for storage of passenger cars, tow trucks and miscellaneous equipment. Approximately 6.81 acres of the site are currently occupied. RV Storage has been added to the project description since the first draft of this report was submitted in June 2018. The RV Storage has been included as a project alternative.

a. Project Trip Generation with General Storage Only

Exhibit 5 provides a summary of the peak hour traffic generated by existing uses at the site based on traffic counts into and out of the project driveway. The project currently generates 9 trips during the AM peak hour (8 in, 1 out) and 4 trips during the PM peak hour (0 in, 4 out). The Project Buildout will occupy the entire 13.66-acre site, which is 2.01 times the size of the area occupied by existing tenants. It is estimated to generate two times the existing project traffic, or 18 trips during the AM peak hour (16 in, 2 out) and 8 trips during the PM peak hour (0 in, 8 out).

Project daily traffic is estimated based on the 7 hours of project driveway counts for each of the three count days that are summarized on **Exhibit 5**. These included 6 to 10 am and 3 to 6 pm and represent more than half of the hours of operation of the facility (informally from 5am to 4:30pm with traffic counted exiting the site as late as 6 pm). The average for these 7 hours is 29 vehicles per day. The existing operations at the site are estimated to generate about 58 daily trips. Full project buildout is estimated to generate two times this amount, or 116 vehicles per day. Project Buildout trip generation is estimated in **Exhibit 6**.

b. Project Trip Generation Including RV Storage

The RV storage could accommodate up to 20 spaces. An RV storage project was recently proposed at the Salinas Self Storage project, which is located about one-half mile from the site at the southwest corner of the Harrison Road / Sala Road intersection. Based on that project, about 40 RV spaces can be stored per acre, including parking spaces and circulation aisles. The 20 spaces would therefore displace about 0.50 acres of general storage. Each RV space is assumed to generate the same amount of traffic as a Mini-Warehouse unit (ITE Land Use Category 151), which is consistent with the "Salinas Self-Storage Facility Expansion Traffic Impact Analysis Report," prepared by Mott MacDonald (formerly Hatch Mott MacDonald) in April, 2016 and "Salinas Self-Storage Facility Expansion TIA Phase 1 Addendum," Mott MacDonald, October 17, 2016. This includes 19.19 daily trips per 100 spaces, with 1.56 morning peak hour trips and 1.79 evening peak hour trips per 100 spaces.

One acre of RV storage is therefore estimated to generate about 7.68 daily trips with 0.62 during the morning peak hour and .72 during the evening peak hour. By comparison, the contractor storage is estimated to generate about 8.52 trips per day per acre with 1.32 during the morning peak hour and 0.59 during the evening peak hour. The RV storage would generate slightly less trips per acre than contractor storage daily and less than one-half during the morning peak hour. It would generate slightly more trips during the evening peak hour. The differences between the two uses are so small that there is virtually no difference for a project of this size.

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Exhibit 6 tabulates that 4 daily trips and only occasional morning or evening peak hour trips will be generated by the storage for 20 RV's. The RV spaces will displace general storage that would generate 5 daily trips with one trip in the morning peak hour and only an occasional trip in the evening peak hour. The project could increase the number of RV storage spaces and reduce the project trip generation. On that basis, the worst-case project assumption is the generic storage alternative analyzed in the original report. **Exhibit 6** tabulates the project buildout with 20 RV storage spaces. It would generate the identical daily (116), morning peak hour (8) and evening peak hour (8) trips as the project occupied solely with contractor storage.

c. Project Trip Distribution

The driveway counts separated heavy trucks. As indicated on **Exhibit 5**, trucks represented 2 of the 9 total project AM peak hour trips (0 in and 2 out) and no PM peak hour trips.

Project trip distribution is estimated based on the existing project turning, which is also tabulated below.

Direction on Harrison Road	Total Project Traffic	Project Truck Traffic
To and From North	8%	Nil
To and From South	92%	100%
Total	100%	100%

Project Traffic Distribution

The resulting project traffic assignment is as follows.

Direction on Harrison Road	Total Project Traffic		Project Truck Traffic	
	AM Peak	PM Peak	AM Peak	PM Peak
To and From North	2	1	0	0
To and From South	16	7	4	0
Total	18	8	4	0

Project Buildout Traffic Assignment

3.2 Existing Plus Project Intersection Operations

Trips generated by the project were combined with the existing intersection traffic volumes to estimate Existing Plus Project traffic conditions volumes, which are shown in **Exhibit 7**. Level of service analyses were conducted for the study intersections. Based on the analysis, all the study intersections are projected to operate at acceptable levels of service under Existing Plus Project traffic conditions and no improvements are recommended. Intersection levels of service are summarized in **Exhibit 4**. Intersection LOS calculation worksheets are included as **Appendix C**.

A left turn lane warrant analysis for northbound Harrison Road at the project driveway is included as **Appendix D**. A left turn lane will not be warranted with traffic generated by project buildout.

3.3 Existing Plus Project Impacts

Based on the Monterey County and Caltrans criteria for project impacts, the proposed project would not have an impact at any of the study intersections or road segments. No mitigations are required.

4 CUMULATIVE PLUS PROJECT CONDITIONS

This section describes the analysis and results for Cumulative Plus Project traffic conditions. The Cumulative Plus Project conditions analysis is based on City of Salinas General Plan buildout traffic volume forecasts.

4.1 Cumulative Plus Project Traffic Volumes

Traffic forecasts for the cumulative condition are based on General Plan Buildout traffic forecasts documented in the “City of Salinas General Plan Circulation Element and Environmental Impact Report Traffic Study,” Higgins Associates, June 11, 2002. The traffic forecasts documented in the Circulation Study include traffic generated by the City’s future growth area and were supplemented by traffic forecasts prepared for the Butterfly Village component of the “Rancho San Juan Revised Specific Plan Addendum Traffic Impact Analysis,” Kimley Horn, Inc., October 2005 and the “Salinas Sphere of Influence Amendment and Annexation Supplemental TIA,” Fehr & Peers, July 2007. The cumulative road network includes the Western Bypass. The Western Bypass would extend between Boronda Road at Highway 101 in the north and Blanco Road at Davis Road in the south. The cumulative road network also includes the Alvin Drive extension, which would extend Alvin Drive to the west over Highway 101.

The most recent traffic forecasts for the area are contained in the “Economic Development Element Draft Transportation Impact Analysis,” Fehr & Peers, August 31, 2017. These forecasts are lower than those included in the previous studies. The higher volumes, which are more conservative forecasts, are used in this analysis.

In addition, a highway commercial project has recently been proposed for the vacant parcel between the Hildebrand project and Sala Road. A preliminary traffic study submitted as a letter report to Brad Sobel entitled, “Harrison Road Commercial Center Access Study, Greater Salinas Area, Monterey County, CA,” August 10, 2018, includes traffic volume estimates for the conservative cumulative traffic at the Harrison Road / Sala Road intersection and along the Hildebrand & Sons Storage Yard plus the traffic anticipated by the Harrison Road Commercial Center.

Cumulative Without Project peak hour intersection traffic volumes are presented in **Exhibit 8**.

4.2 Cumulative Without Project Intersection Operations

Level of service analyses were conducted for the study intersections. Intersection levels of service are summarized in **Exhibit 5**. Intersection LOS calculation worksheets are included as **Appendix C**.

The Harrison Road intersection is forecasted to operate at LOS F under the Cumulative Without Project scenario with no mitigation. The intersection will require second Harrison Road northbound left and through lanes, a second southbound Harrison Road through lane and second eastbound Sala Road left turn lane. Right turn overlaps (green arrows) will also be required the southbound and eastbound right turn movements. With these improvements, the intersection will operate at LOS B in the morning and evening peak hours.

According to the previously cited “Harrison Road Commercial Center Access Study,” the Harrison Road Commercial Project will require improvements along its Harrison Road frontage that will extend from Sala Road to the southeast corner of the Hildebrand site. These will be needed to accommodate additional turn lanes at the Commercial Project driveways. Pavement widening will also be required along several hundred feet of the Hildebrand frontage in order to provide transitions from the undivided

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two-lane Harrison Road to the left and right turn channelization and additional through lanes along the Harrison Road Commercial Project. A preliminary review indicates that adequate right of way is provided along Harrison Road so that land will not be needed to be acquired from the Hildebrand site. If it is determined later in the design process that right of way is needed, the Harrison Road Commercial Project will need to negotiate its purchase from the Hildebrand property. It is not the responsibility of the Hildebrand property to provide this right of way.

4.3 Cumulative Plus Project Impacts

Cumulative Plus Project traffic volumes are illustrated on **Exhibit 6**. These include the cumulative volumes described in Section 4.2 plus the growth in traffic from the buildout of the Project. It is evident that the Project will add an imperceptible amount of traffic to the otherwise expected cumulative volumes at the Harrison Road / Sala Road intersection. The Project traffic will represent an increase of 0.3% in morning peak hour traffic and less than 0.1% in evening peak hour traffic.

The intersections would decline further into LOS F in both the morning and evening peak hours. The increase in average delay in the morning peak hour would be 1.6 seconds. The increase in average delay in the evening peak hour would be about 0.1 seconds.

With the mitigation recommended under Cumulative Without Project conditions, the Harrison Road / Sala Road intersection would operate at LOS B in the morning and evening peak hours. There would be no change in the average delay in morning peak hour and an increase of only 0.3 seconds in the evening peak hour.

A left turn lane warrant analysis for northbound Harrison Road at the project driveway is included as. A left turn lane will not be warranted to accommodate traffic generated by project buildout and cumulative traffic growth on Harrison Road.

5 PROJECT ACCESS AND ON-SITE CIRCULATION

This section describes site access and internal circulation at the project site and is based on a review of the project site plan.

Vehicular access to the project site will be via a driveway on Harrison Road. As shown in **Exhibit 5**, the project driveway is expected to operate at an acceptable LOS A during the AM and PM peak hours under Existing Plus Project conditions and an acceptable LOS B during the AM and PM peak hours under Cumulative Plus Project conditions.

A left turn lane warrant analysis of the northbound Harrison Road left turn movement at the Project Driveway is included as **Appendix D**. It indicates that left turn lane will not be warranted under Cumulative Plus Project conditions.

The existing project driveway appears adequate for the buildout of the proposed use.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Project Impacts

No off-site improvements would be required by the project to achieve acceptable traffic operations under Existing Plus Project traffic conditions. The project will add incrementally to the Cumulative impacts at the Harrison Road / Sala Road intersection. The additional traffic represents an increase of 0.3% in morning peak hour traffic and less than 0.1% in evening peak hour traffic. The Project will not change the average delay in the morning peak hour and will only increase delay by 0.3 seconds with the recommended mitigation for the Harrison Road Commercial Project. This is essentially imperceptible and has no effect on the Cumulative traffic operations or needed improvements. The Project should have no financial responsibility for the recommended Cumulative mitigations at this intersection.

The project will represent an incremental contribution to regional traffic impacts requiring improvements on the regional highway system. The project will be required to pay County and regional traffic impact fees as described in Section 6.2.

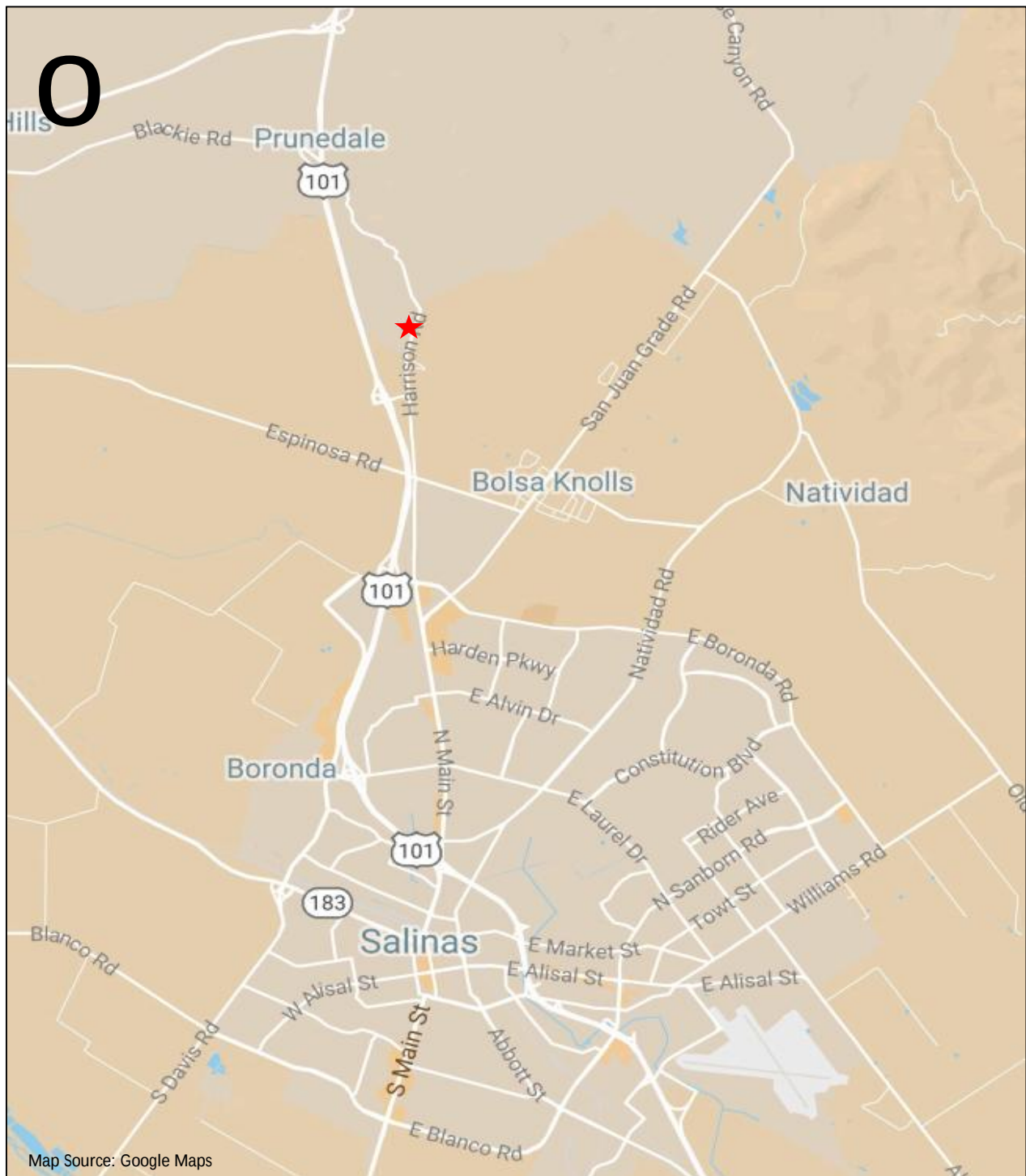
6.2 Project Mitigation Measures

a. TAMC Fee

Both TAMC and Caltrans consider payment of regional development impact fees as adequate mitigation for project contributions to cumulative impacts to state highways and the regional road network. Therefore, payment of the TAMC fee would mitigate the project's contribution to cumulative impacts on the regional highway system. The project is a special land use and will be assessed based on project buildout daily trip generation.

b. Countywide Traffic Impact Fee

Monterey County assesses fees for the Countywide Traffic Impact Fee on an ad hoc basis per the impact fee program's draft fee schedule. This will need to be negotiated with the County of Monterey based on project buildout daily trip generation.



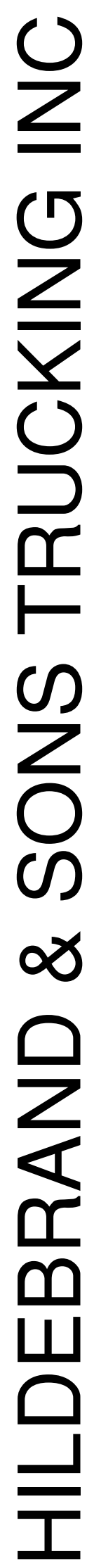
LEGEND

★ Project Location

219 HARRISON ROAD - SALINAS, CA 93907

Exhibit 2

Project Site Plan



DEREK JOHNSON, P.E.
CENTRAL COAST ENGINEERS, INC.
21 W. ALISAL STREET, SUITE 119
SALINAS, CA 93901
Phone (831) 751-5554
Fax (831) 751-2226

HILDEBRAND & SONS TRUCKING INC
6 LEWIS RD
ROYAL OAKS, CA 95016
CONTACT: ROBERT McDONALD
Phone (831) 901-2392

MAUREN WRUCK
PLANNING AND DEVELOPMENT CONSULTANTS LLC
21 W. ALISAL STREET, SUITE III
SALINAS, CA 93401
Phone (831) 771-2557

- 1.) CONCRETE K-RAIL STORAGE
- 2.) HORSE, IRRIGATION & CONSTRUCTION TRAILER PARKING

APN#:.....113-091-013-000
113-091-014-000
113-091-015-000

ZONING.....HC-UR

LOT AREA

113-041-013-000		197,760±	sq.ft.	(4.54± ACRES)
113-041-014-000		198,630±	sq.ft.	(4.56± ACRES)
113-041-015-000		198,630±	sq.ft.	(4.56± ACRES)

PROPERTY LINE

EXISTING GROUND,
OILED & COMPACTED
ASPHALT SURFACE
TO REMAIN

PROPOSED FENCE &
12' GATE



AERIAL PHOTO OVERLAY

SC: 1"=200'

REVISIONS	BY



CCE
CENTRAL COAST
ENGINEERS, INC.
P.O. BOX 2503
SALINAS, CA 93902
P 831.757.554
F 831.757.2226

PROJECT TITLE: STORAGE YARD FOR:
HILDEBRAND & SONS TRUCKIN, INC.
219 HARRISON ROAD SALINAS, CA 93907
APN: 113-091-013-000 / 113-091-014-000 / 113-091-015-000

SHEET TITLE: COVER SHEET / PROJECT DATA & SITE PLAN

JOB No. CCE-17-134

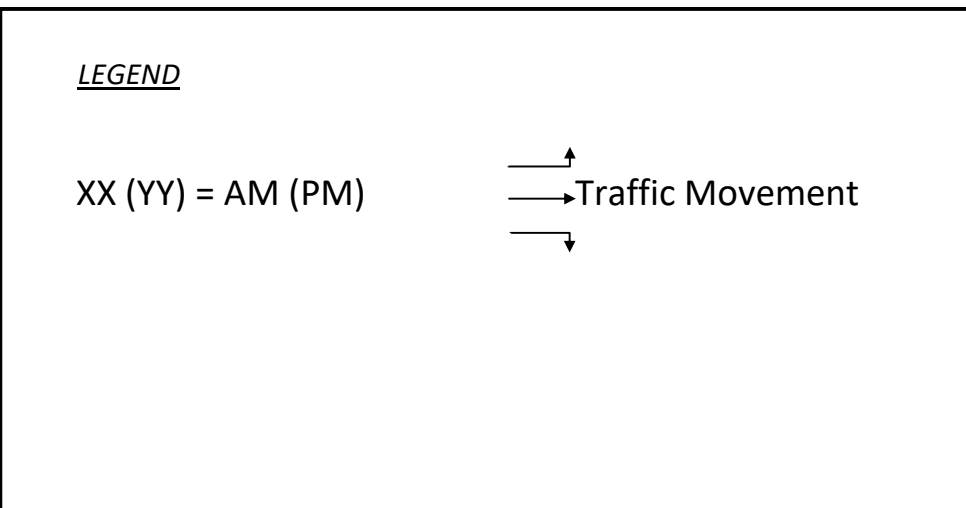
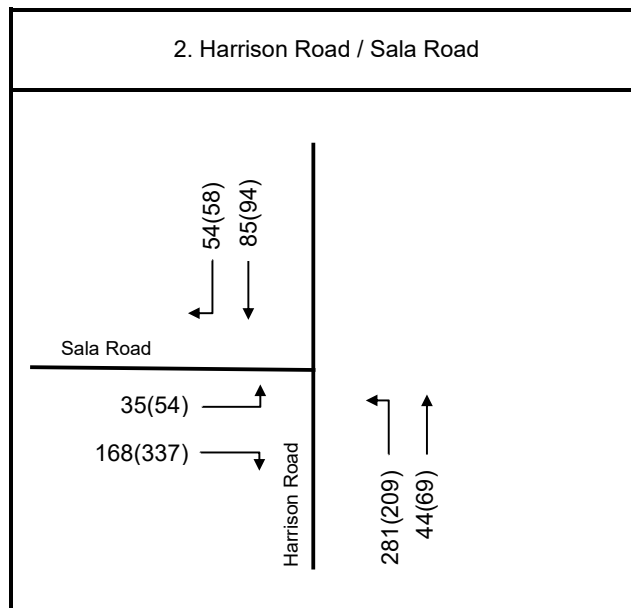
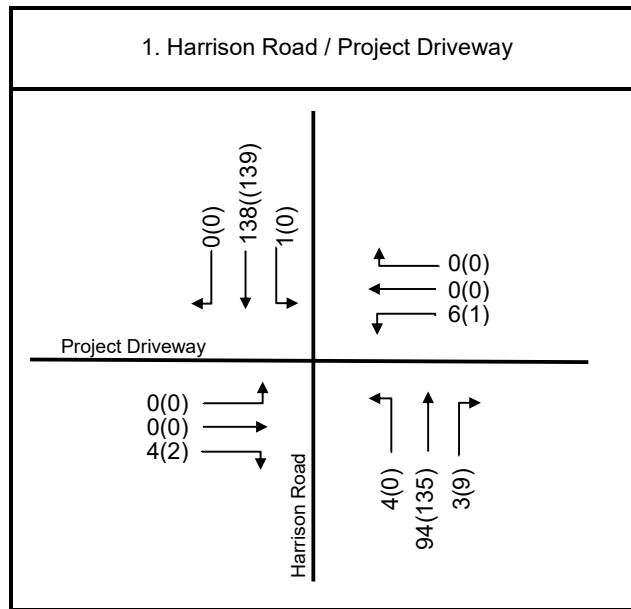
DATE: 11/22/2017

SCALE: AS NOTED

DRAWN BY:

SHEET No.: T-1

OF SHEETS



N-S Street	E-W Street	Existing Intersection Control	LOS Stnd.	Peak Hour	Existing		Existing Plus Project		Cumulative Without Project		Cumulative With Project	
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1 Harrison Road	Hildebrand Driveway	Two-Way Stop	D (E/E)	Wky AM	0.6(9.9/10.3)	A (A/B)	0.9(10.0/10.5)	A (B/B)	0.4(14.4/25.3)	A(B/D)	0.4(14.4/25.3)	A(B/D)
				Wky PM	0.1(9.9/10.6)	A (A/B)	0.2(9.9/10.6)	A (A/B)	0.1(12.9/28.1)	A (B/D)	0.1(12.9/28.1)	A (B/D)
					No improvement Warranted		No improvement Warranted		No improvement Warranted		No improvement Warranted	
2 Harrison Road	Sala Road	Signal With Mitigation	D	Wky AM	17.8	B	17.7	B	348.4	F	350.0	F
				Wky PM	24.1	C	24.1	C	476.4	F	476.5	F
					No improvement Warranted		No improvement Warranted		15.0	B	15.0	B
									16.8	B	17.3	B
		Mitigation Description							1. Add 2nd NB L, 2nd NB 2. Add 2nd SB T 3. Add 2nd EB L 4. Add EB R & SB R Overlaps		Same as Cumulative Witho Project.	

Notes:

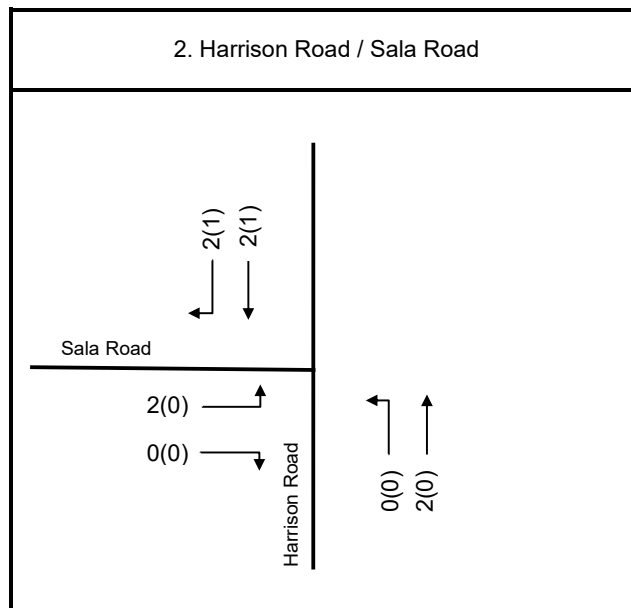
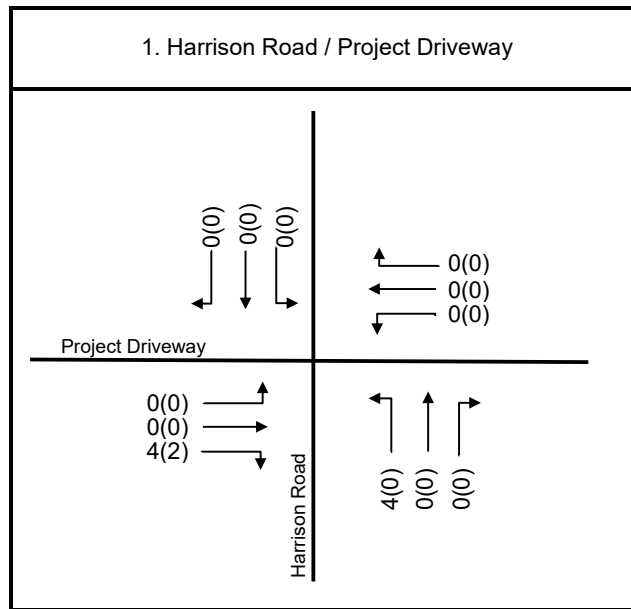
1. LOS Stnd. = Level of Service Standard.
2. XX (YY) = Overall (Side Street).
3. Analysis performed using 2000 and 2010 Highway Capacity Manual methodologies.
4. Overall level of service standard for the County of Monterey is LOS D.
5. Worst approach level of service standard is generally LOS E. Level of service "F" is the level of service at which improvements would normally be required.
6. Above delays and levels of service are summarized from calculations in **Appendix C**.
7. NB - Northbound, SB - Southbound, EB - Eastbound
8. T= Through Lane, L - Left Turn Lane, R - Right Turn Lane
9. R Overlap - Right turn traffic signal overlap (green arrow that is concurrent with complementary left turn green arrow)

Hildebrand & Sons Trucking Storage Yard																																
Traffic Count Summary																																
Total Vehicles																																
		MORNING PEAK HOUR									EVENING PEAK HOUR									MORNING AND EVENING												
		In			Out			Total			In			Out			Total			GRAND TOTAL												
Date	Day	SB Rt	NB Lt	Total	SB (EB Rt)	NB (EB Lt)	Total	To & From South	To & From North	Total	SB Rt	NB Lt	Total	SB (EB Rt)	NB (EB Lt)	Total	To & From South	To & From North	Total	To & From South	To & From North	Total										
May 8, 2018	Tuesday	1	4	5	4	0	4	8	1	9	0	1	1	1	0	1	2	0	2	10	1	11										
May 9, 2018	Wednesday	0	5	5	4	1	5	9	1	10	0	2	2	2	0	2	4	0	4	13	1	14										
May 10, 2018	Thursday	0	4	4	3	0	3	7	0	7	0	3	3	3	0	3	6	0	6	13	0	13										
Total Volume		1	13	14	11	1	12	24	2	26	0	6	6	6	0	6	12	0	12	36	2	38										
Average Volume		0	4	4	4	0	4	8	1	9	0	2	2	2	0	2	4	0	4	12	1	13										
Percent - Traffic Distribution								89%	11%	100%							100%	0%	100%	92%	8%	100%										
		MORNING PEAK 4 HOURS (6 AM TO 10 AM)									EVENING PEAK 3 HOURS (3 PM TO 6 PM)									MORNING AND EVENING												
		In			Out			Total			In			Out			Total			PEAK 7 HOURS GRAND TOTAL												
Date	Day	SB Rt	NB Lt	Total	SB (EB Rt)	NB (EB Lt)	Total	To & From South	To & From North	Total	SB Rt	NB Lt	Total	SB (EB Rt)	NB (EB Lt)	Total	To & From South	To & From North	Total	To & From South	To & From North	Total										
May 8, 2018	Tuesday	2	7	9	9	0	9	16	2	18	0	6	6	6	1	7	12	1	13	28	3	31										
May 9, 2018	Wednesday	0	8	8	8	1	9	16	1	17	0	5	5	4	0	4	9	0	9	25	1	26										
May 10, 2018	Thursday	1	8	9	6	1	7	14	2	16	1	5	6	7	0	7	12	1	13	26	3	29										
Total Volume		3	23	26	23	2	25	46	5	51	1	16	17	17	1	18	33	2	35	79	7	86										
Average Volume		1	8	9	8	1	9	15	2	17	0	5	5	6	0	6	11	1	12	26	2	29										
Percent - Traffic Distribution								88%	12%	100%							92%	8%	100%	91%	8%	99%										
Heavy Vehicles (2, 3, 4 and 5 Axle Trucks)																																
		MORNING PEAK HOUR									EVENING PEAK HOUR									MORNING AND EVENING												
		In			Out			Total			In			Out			Total			GRAND TOTAL												
Date	Day	SB Rt	NB Lt	Total	SB (EB Rt)	NB (EB Lt)	Total	To & From South	To & From North	Total	SB Rt	NB Lt	Total	SB (EB Rt)	NB (EB Lt)	Total	To & From South	To & From North	Total	To & From South	To & From North	Total										
May 8, 2018	Tuesday	0	0	0	3	0	3	3	0	3	0	0	0	0	0	0	0	0	0	3	0	3										
May 9, 2018	Wednesday	0	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2										
May 10, 2018	Thursday	0	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2										
Total Volume		0	0	0	7	0	7	7	0	7	0	0	0	0	0	0	0	0	0	7	0	7										
Average Volume		0	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2										
Percent - Traffic Distribution								100%	0%	100%							0%	0%	0%	100%	0%	100%										
Heavy Vehicles (2, 3, 4 and 5 Axle Trucks)																																
		MORNING PEAK FOUR HOURS 6 AM TO 10 AM									EVENING PEAK THREE HOURS 3 PM TO 6 PM									MORNING AND EVENING 7 HOURS GRAND TOTAL												
		In			Out			Total			In			Out			Total			To & From												
Date	Day	SB	NB	Total	SB	NB	Total	To & From South	To & From North	Total	SB	NB	Total	SB	NB	Total	To & From South	To & From North	Total	To & From South	To & From North	Total										
May 8, 2018	Tuesday	0	2	2	7	0	7	9	0	9	0	6	6	2	0	2	8	0	8	17	0	17										
May 9, 2018	Wednesday	0	0	0	3	0	3	3	0	3	0	3	3	0	0	0	3	0	3	6	0	6										
May 10, 2018	Thursday	0	0	0	4	1	5	4	1	5	0	3	3	0	0	0	3	0	3	7	1	8										
Total Volume		0	2	2	14	1	15	16	1	17	0	12	12	2	0	2	14	0	14	30	1	31										
Average Volume		0	1	1	5	0	5	5	0	6	0	4	4	1	0	1	5	0	5	10	0	10										
Percent - Truck Traffic Distribution								83%	0%	83%							100%	0%	100%	100%	0%	100%										
		No. of Axles No. of Parked Trucks % of Total No. by Axle No. by Axle																														
		2 Axle 3 27% 5 0 14																														
		3 Axle 3 27% 5 0 14																														
		4 Axle 0 0% 0 0 0																														
		5 Axle 5 45% 9 0 24																														
		Total 11 100% 19 0 52																														
												EXISTING PROJECT DAILY TRAFFIC GENERATION ESTIMATE (2x 7 HOUR AVERAGE)																				
																					To & From South			To & From North			Total					
												Daily Total Project Traffic Estimate												53			5			58		
												Daily Project Passenger Car Traffic Estimate												33			5			6		
												Daily Project Truck Traffic Estimate												20			0			52		
												PROJECT BUILDOUT DAILY TRAFFIC GENERATION ESTIMATE (2 TIMES EXISTING PROJECT)																				
																					South			North			Total					
												Daily Total Project Traffic Estimate												106			10			116		
												Daily Project Passenger Car Traffic Estimate												66			10			12		
												Daily Project Truck Traffic Estimate												40			0			104		

Keith Higgins
Traffic Engineer

Exhibit 5
Existing Project
Traffic Count Summary

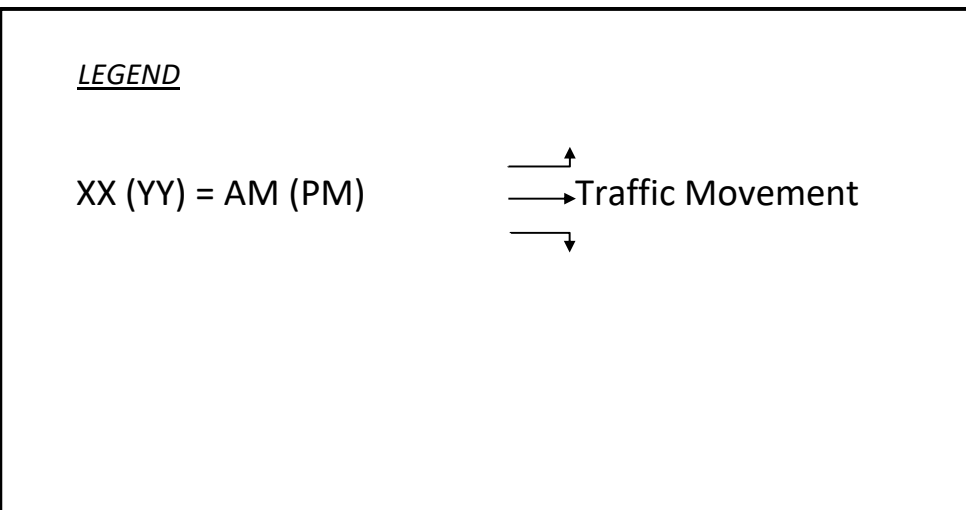
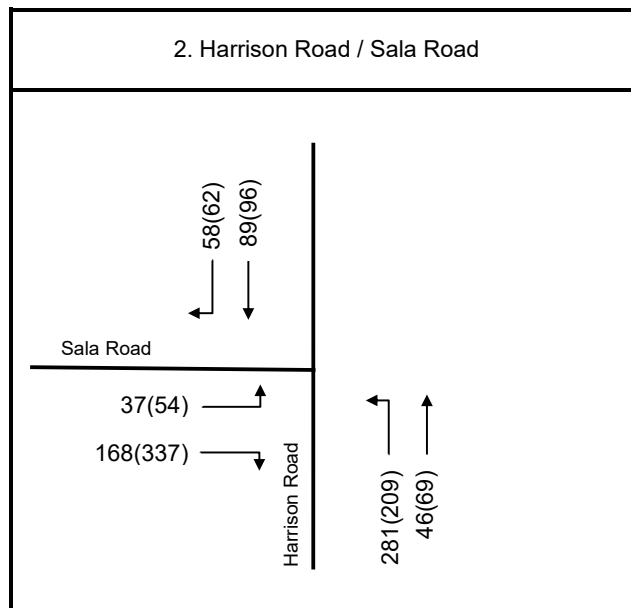
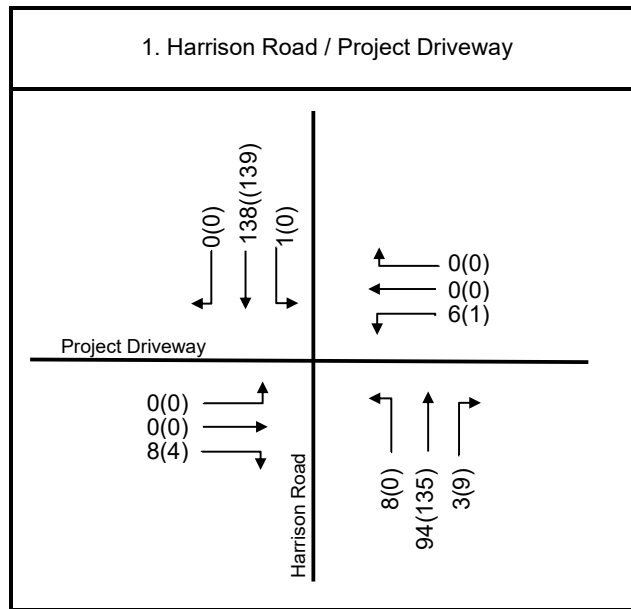
EXISTING PROJECT														
LAND USE	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR				TRIPS IN	TRIPS OUT	TRIPS IN	TRIPS OUT
			TRIPS	ADT	OF	PEAK HOUR	TRIPS	ADT	OF	PEAK HOUR				
Existing Project	6.81 Acres	58	9	16%	8	1	4	7%	0	4				
TRIP GENERATION RATES - BASED ON EXISTING PROJECT	PROJECT SIZE	DAILY TRIP RATE	AM PEAK HOUR				PM PEAK HOUR				TRIPS IN	TRIPS OUT	TRIPS IN	TRIPS OUT
			TRIPS	ADT	OF	PEAK HOUR	TRIPS	ADT	OF	PEAK HOUR				
Land Use - Contractor Storage Yard	Per Acre	8.52	1.32	16%	89%	11%	0.59	7%	0%	100%				
PROJECT BUILDOUT - GENERAL STORAGE														
LAND USE	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR				TRIPS IN	TRIPS OUT	TRIPS IN	TRIPS OUT
			TRIPS	ADT	OF	PEAK HOUR	TRIPS	ADT	OF	PEAK HOUR				
Project Buildout	13.66 Acres	116	18	16%	16	2	8	7%	0	8				
PROJECT BUILDOUT - WITH RV STORAGE														
RV Storage Trip Rate	Per RV Space	0.19	0.02	8%	60%	40%	0.02	9%	60%	40%				
RV Storage Trip Rate	Per Acre	7.68	0.62	8%	60%	40%	0.72	9%	60%	40%				
LAND USE	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR				TRIPS IN	TRIPS OUT	TRIPS IN	TRIPS OUT
			TRIPS	ADT	OF	PEAK HOUR	TRIPS	ADT	OF	PEAK HOUR				
Project General Storage	13.16 Acres	112	17	16%	15	2	8	7%	0	8				
Project RV Storage	20 Spaces	4	0	8%	0	0	0	9%	0	0				
Project Total		116	18	15%	16	2	8	7%	0	8				

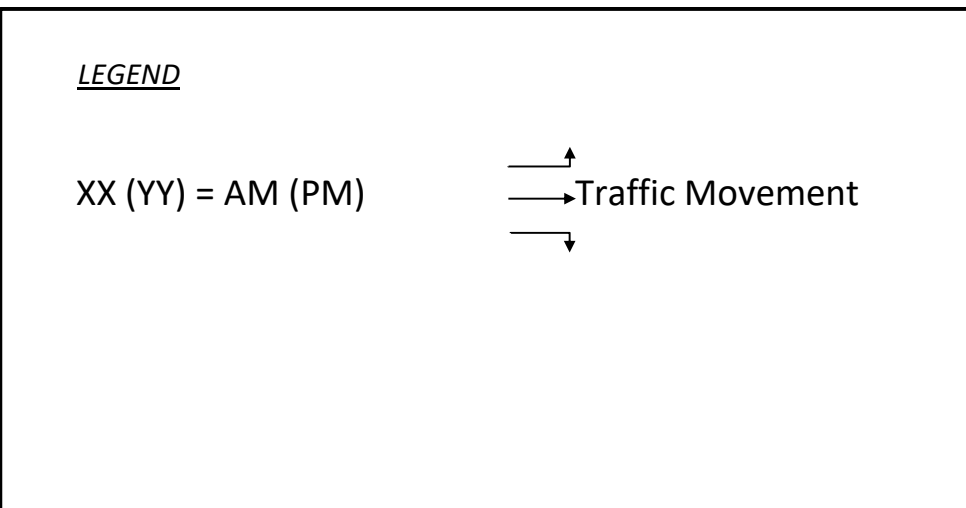
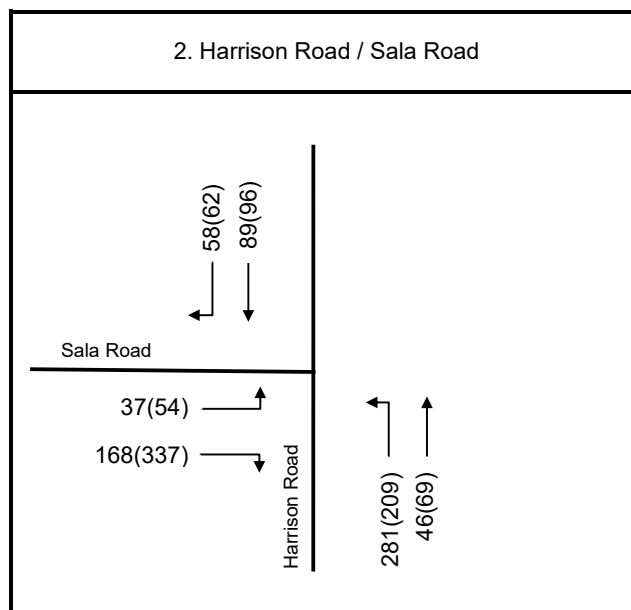
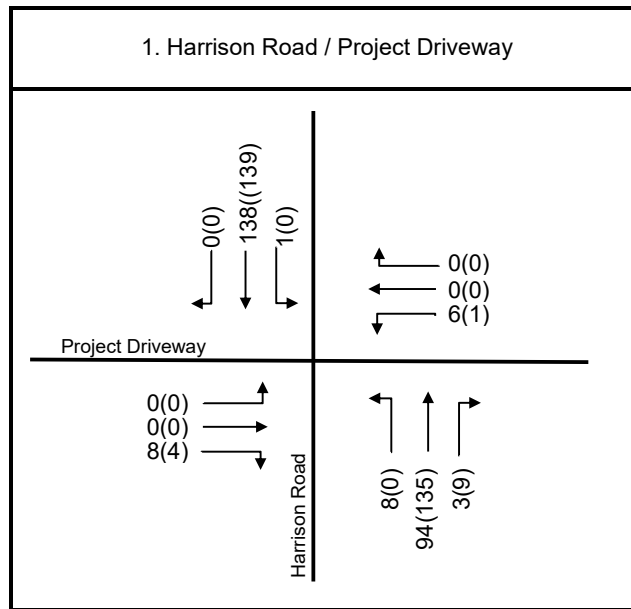


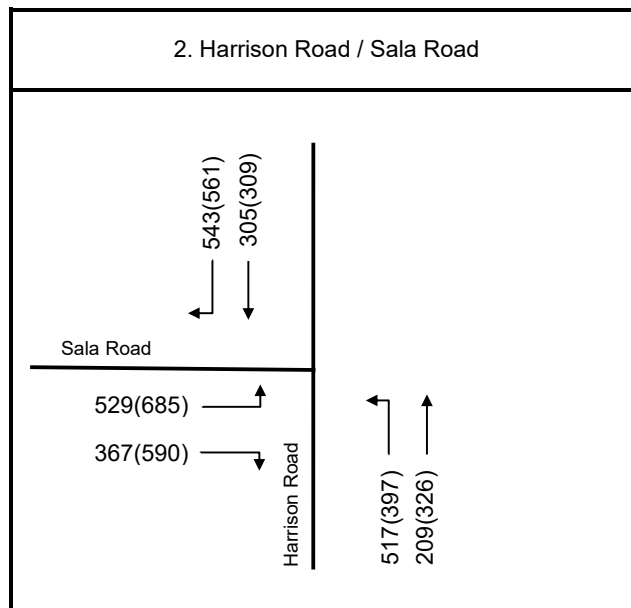
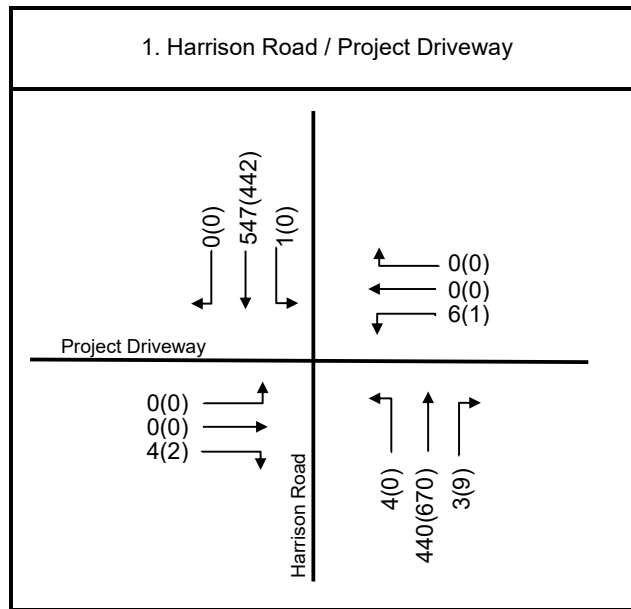
LEGEND

XX (YY) = AM (PM)





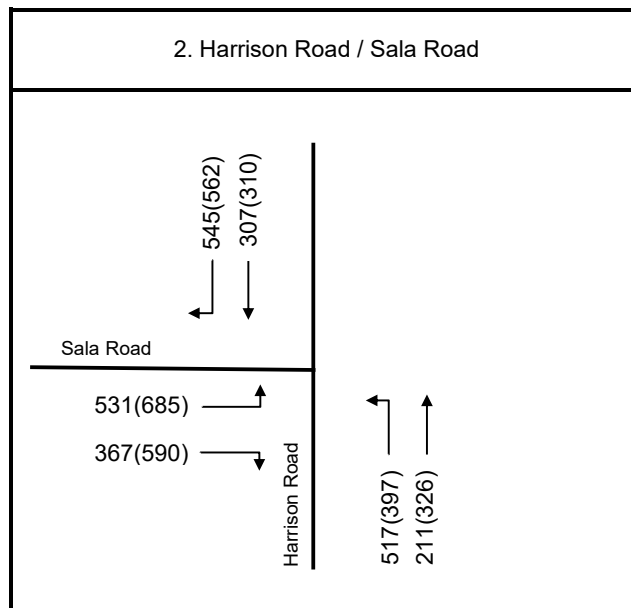
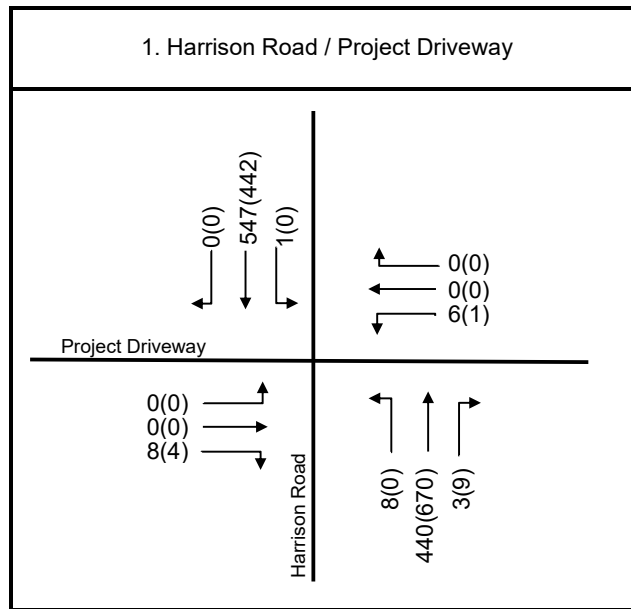




LEGEND

XX (YY) = AM (PM)





LEGEND

XX (YY) = AM (PM)



APPENDIX A

Level of Service Descriptions

- A-1: Signalized Intersections
- A-2: Two-Way (or One-Way) Stop Controlled Intersections
- A-3: All-Way Stop Controlled Intersections
- A-4: Road Segment Peak Hour Threshold Volumes

APPENDIX A-1

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 2010 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. If the volume-to-capacity (v/c) ratio at the intersection is larger than 1.0, the intersection operates at LOS F, regardless of the actual control delay.

LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS (Reference 2010 Highway Capacity Manual)

Level of Service	Control Delay (seconds / vehicle)
A	<10
B	>10 - 20
C	>20 - 35
D	>35 - 55
E	>55 - 80
F	>80; v/c > 1.0

APPENDIX A-2

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

Two-Way (and One-Way) stop controlled 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 judgment. 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 judgment 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.

If the volume-to-capacity (v/c) ratio at the intersection is larger than 1.0, the intersection operates at LOS F, regardless of the actual control delay.

LEVEL OF SERVICE (LOS) CRITERIA FOR TWSC INTERSECTIONS (Reference 2010 Highway Capacity Manual)

Level of Service	Control Delay (seconds / vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50; v/c > 1.0

APPENDIX A-3

LEVEL OF SERVICE (LOS) DESCRIPTION UNSIGNALIZED INTERSECTIONS WITH ALL-WAY STOP CONTROL (AWSC)

AWSC intersections require every vehicle to stop at the intersection before proceeding. Since each driver must stop, the judgement as to whether to proceed into the intersection is a function of traffic conditions on the other approaches. While giving priority to the driver on the right is a recognized rule in some areas, it is not a good descriptor of actual intersection operations. What happens is the development of a consensus of right-of-way that alternates between the drivers on the intersection approaches, a consensus that depends primarily on the intersection geometry and the arrival patterns at the stop line.

If no traffic is present on the other approaches, a driver can proceed immediately after the stop is made. If there is traffic on one or more of the other approaches, a driver proceeds only after determining that there are no vehicles currently in the intersection and that it is the driver's turn to proceed. Since no traffic signal controls the stream movement or allocates the right-of-way to each conflicting stream, the rate of departure is controlled by the interaction between the traffic streams themselves.

For AWSC intersections, the average control delay (in seconds per vehicle) is used as the primary measure of performance. Control delay is the increased time of travel for a vehicle approaching and passing through an AWSC intersection, compared with a free-flow vehicle if it were not required to slow down or stop at the intersection.

The criteria for AWSC intersections have different threshold values than do those for signalized intersections, primarily because drivers expect different levels of performance from different kinds of traffic control devices (i.e., traffic signals, two way stop or all way stop, etc.). The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection and a higher level of control delay is acceptable at a signalized intersection for the same LOS.

For AWSC analysis using the HCM 2010 method, the LOS shown reflects the weighted average of the delay on each of the approaches. If the volume-to-capacity (v/c) ratio at the intersection is larger than 1.0, the intersection operates at LOS F, regardless of the actual control delay.

LEVEL OF SERVICE (LOS) CRITERIA FOR AWSC INTERSECTIONS (Reference 2010 Highway Capacity Manual)

Level of Service	Control Delay (seconds / vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50; v/c > 1.0

APPENDIX A-4
LEVEL OF SERVICE THRESHOLD VOLUMES FOR VARIOUS ROADWAY TYPES
TOTAL PEAK HOUR VOLUME IN BOTH DIRECTIONS (PHV)

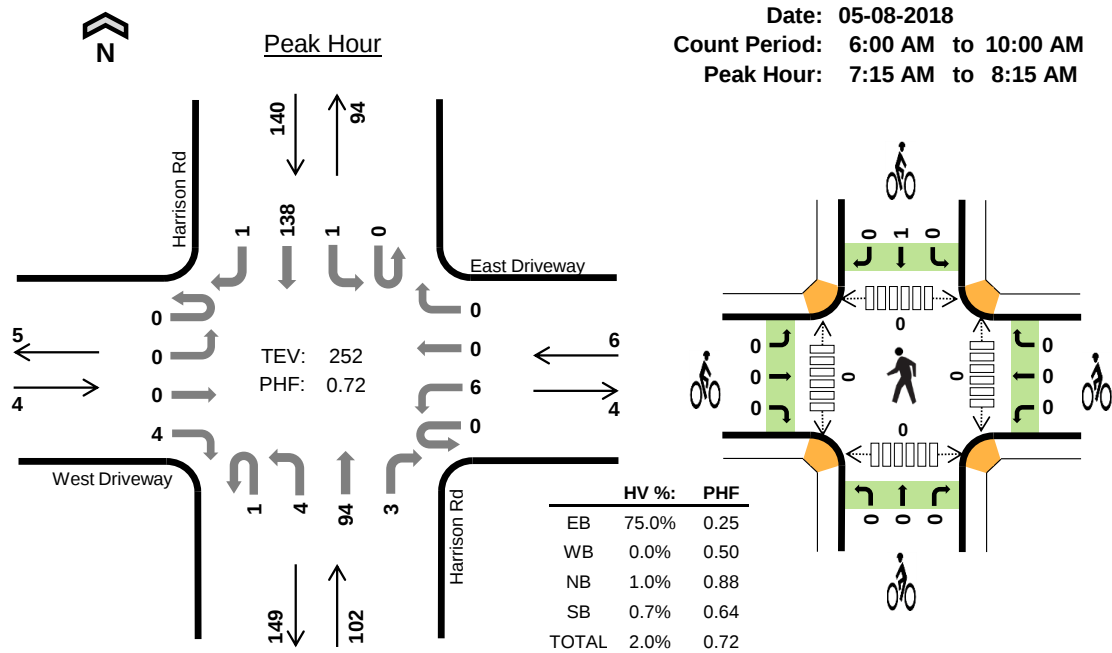
ROADWAY TYPE	CODE	LOS A	LOS B	LOS C	LOS D	LOS E
10-Lane Freeway	10F	6,400	9,900	13,900	16,000	18,200
8-Lane Freeway	8F	5,100	7,900	11,200	13,600	14,600
6-Lane Freeway	6F	3,900	5,900	8,500	10,200	11,000
8-Lane Expressway	8E	3,500	5,400	7,500	9,000	9,800
6-Lane Expressway	6E	2,800	4,200	5,600	6,700	7,400
4-Lane Freeway	4F	2,600	4,000	5,700	6,900	7,400
8-Lane Divided Arterial (w/ left-turn lane)	9	4,000	4,700	5,400	6,100	6,800
6-Lane Divided Arterial (w/ left-turn lane)	7	3,200	3,800	4,300	4,900	5,400
4-Lane Expressway	4E	1,800	2,700	3,600	4,500	5,000
4-Lane Divided Arterial (w/ left-turn lane)	5	2,200	2,500	2,900	3,250	3,600
4-Lane Undivided Arterial (no left-turn lane)	4	1,600	1,900	2,200	2,400	2,700
2-Lane Rural Highway	2R	400	800	1,200	1,700	2,500
2-Lane Arterial (w/left turn lane)	3	1,100	1,250	1,450	1,600	1,800
2-Lane Collector	2	600	750	900	1,050	1,200
2-Lane Local	1	120	140	160	180	200
1-Lane Freeway Diamond Ramp	1D	1,320	1,540	1,760	1,980	2,200
2-Lane Freeway Diamond Ramp	2D	2,640	3,080	3,520	3,960	4,400
1- Lane Freeway Loop Ramp	1L	1,080	1,260	1,440	1,620	1,800
2- Lane Freeway Loop Ramp	2L	1,920	2,240	2,560	2,880	3,200

Notes:

- The above threshold volumes for preliminary planning purposes only. If available, the results of detailed level of service analyses will typically have priority over the levels of service derived from this table. In that case this table can be used by the analyst for providing additional considerations for recommending the appropriate general roadway type for the specific condition being analyzed.
- All above facilities assume a 60%/40% peak hour directional split, with the peak hour representing approximately 10% of the Average Daily Traffic (ADT).
- Based on *Highway Capacity Manual*, Transportation Research Board, 2010.
- Freeway thresholds are consistent with conditions utilizing a .95 peak hour factor, with 2% trucks and slightly over a one-mile average interchange spacing.
- Expressways are consistent with the average of a multi-lane highway (with no signals) and Class 1 arterial (with an average signal spacing of 0.8 signals per mile and a .45 G/C ratio).
- Arterial thresholds are consistent with the average of Class 1 and Class 2 arterials with an assumed signal density of two signals per mile. This assumes a divided arterial with left-turn lanes. Thresholds for four-lane undivided arterials assume approximately two-thirds the capacity of a four-lane divided arterial due to the impedance in traffic flow resulting from left-turning vehicles waiting in the inside through lane, thus significantly reducing the capacity of the roadway.
- Rural highways are generally consistent with the *2010 Highway Capacity Manual* rural highway, assuming 8% trucks, 4% RV's, 20% no-passing, and level terrain. The greatest difference is that it assumes a maximum capacity (upper end of LOS E) of 25,000 rather than the 28,000 calculated using the new *Highway Capacity Manual*.
- Two-lane collectors assume approximately three-fourths of the capacity of a two-lane arterial with left-turn lanes. This is based on the assumption that left-turn channelization is not provided on a two-lane collector.
- Local street level of service thresholds are based upon "Neighborhood Traffic Related Quality-of-Life Considerations" which assumes a standard suburban neighborhood, 40-foot roadway width, and 25 mile per hour speed limit with normal speed violation rates.
- Capacities for Diamond Ramps and Loop Ramps may be slightly higher or lower than the planning level capacities indicated above. The *2010 Highway Capacity Manual* (2010 HCM) states that the capacity of a one-lane diamond to be 2,200 vehicles per hour (vph), and 1,800 vph for a small radius loop ramp. Two-lane freeway ramp capacities are estimated in the 2010 HCM to be 4,400vph for a two-lane diamond, and 3,200vph for a two-lane small radius loop. Varying intermediate capacities are provided for incremental conditions between these extremes. Capacities given for each service level assume the same level of service for the adjoining merging roadway as well as level of service being determined by volume-to-capacity and not attainable speed. Level of service will be controlled by freeway level of service if worse than ramp. Mitigations of level of service deficiencies may include the addition of a lane on the freeway ramp, the addition of an auxiliary lane on the freeway mainline, the addition of approach lanes at the ramp junction with the local intersecting street, and/or geometric modifications to improve the efficiency of the ramp itself or its termini. The appropriate mitigation should be determined on a case-by-case basis, considering freeway main line volumes and weaving, the extent that the freeway ramp volume exceeds the above planning thresholds, and the level of service of the ramp intersection with the local street.
- All volumes are approximate and assume ideal roadway characteristics.

APPENDIX B
Traffic Count Data

Harrison Rd West Driveway



Four-Hour Count Summaries

Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:15 AM		0	0	0	0	0	0	0	0	0	1	17	0	0	0	22	1	41	0
7:30 AM		0	0	0	0	0	3	0	0	1	0	28	0	0	1	54	0	87	0
7:45 AM		0	0	0	0	0	2	0	0	0	2	25	0	0	0	32	0	61	0
8:00 AM		0	0	0	4	0	1	0	0	0	1	24	3	0	0	30	0	63	252
Peak Hour	All	0	0	0	4	0	6	0	0	1	4	94	3	0	1	138	1	252	0
	HV	0	0	0	3	0	0	0	0	0	0	1	0	0	0	1	0	5	0
	HV%	-	-	-	75%	-	0%	-	-	0%	0%	1%	0%	-	0%	1%	0%	2%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
8:00 AM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0
Peak Hour	3	0	1	1	5	0	0	0	1	1	0	0	0	0	0

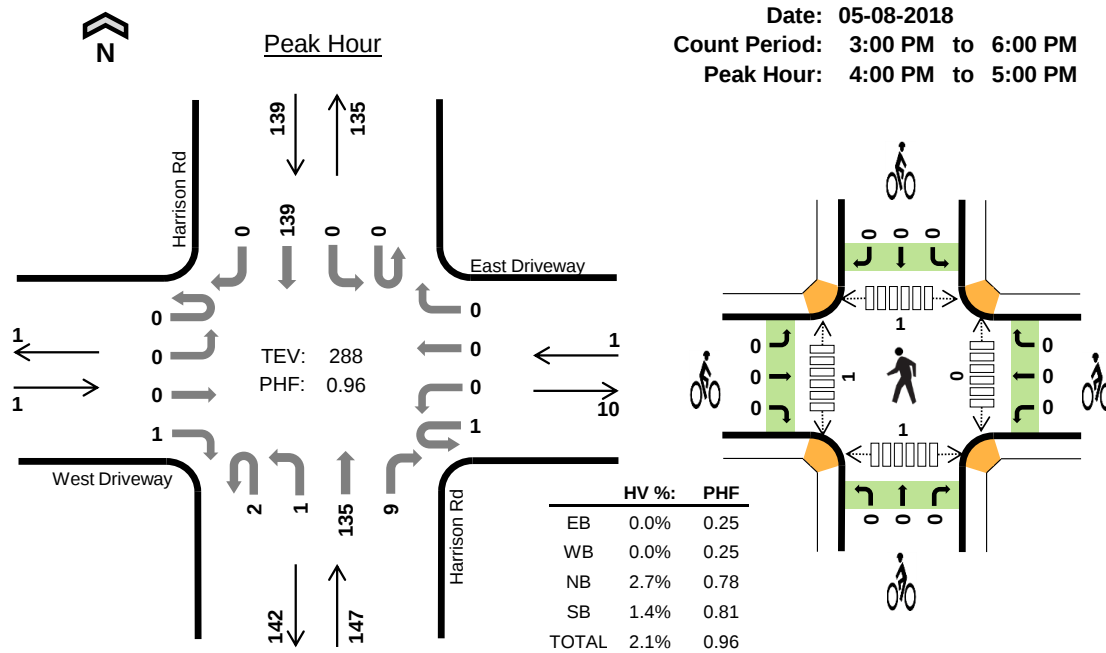
Four-Hour Count Summaries																			
Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM		0	0	0	0	0	0	0	0	0	1	5	0	0	0	16	0	22	0
6:15 AM		0	0	0	1	0	0	0	0	0	0	20	0	0	0	21	0	42	0
6:30 AM		0	0	0	0	0	1	0	0	0	0	28	0	0	0	25	0	54	0
6:45 AM		0	0	0	0	0	0	0	0	0	0	25	0	0	0	15	0	40	158
7:00 AM		0	0	0	0	0	0	0	0	0	0	26	0	0	0	17	0	43	179
7:15 AM		0	0	0	0	0	0	0	0	0	1	17	0	0	0	22	1	41	178
7:30 AM		0	0	0	0	0	3	0	0	1	0	28	0	0	1	54	0	87	211
7:45 AM		0	0	0	0	0	2	0	0	0	2	25	0	0	0	32	0	61	232
8:00 AM		0	0	0	4	0	1	0	0	0	1	24	3	0	0	30	0	63	252
8:15 AM		0	0	0	2	0	1	0	0	0	0	21	0	0	0	16	1	41	252
8:30 AM		0	0	0	0	0	0	0	0	0	0	15	0	0	0	25	0	40	205
8:45 AM		0	0	0	0	0	0	0	0	0	1	21	0	0	0	35	0	57	201
9:00 AM		0	0	0	0	0	0	0	0	0	0	22	0	0	0	22	0	44	182
9:15 AM		0	0	0	1	0	0	0	0	0	0	8	0	0	0	20	0	29	170
9:30 AM		0	0	0	0	0	0	0	0	0	0	12	0	0	0	18	0	30	160
9:45 AM		0	0	0	1	0	1	0	0	0	1	7	0	0	0	17	0	27	130
Count Total		0	0	0	9	0	9	0	0	1	7	304	3	0	1	385	2	721	0
Peak Hour	All	0	0	0	4	0	6	0	0	1	4	94	3	0	1	138	1	252	0
	HV	0	0	0	3	0	0	0	0	0	0	1	0	0	0	1	0	5	0
	HV%	-	-	-	75%	-	0%	-	-	0%	0%	1%	0%	-	0%	1%	0%	2%	0
Note: Four-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.																			
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)								
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total				
6:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:15 AM		1	0	0	0	1	0	0	0	0	0	0	0	0	0	0			
6:30 AM		0	0	0	2	2	0	0	0	0	0	0	0	0	0	1	0	1	
6:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM		0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	
7:45 AM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM		3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM		2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM		0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM		1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM		0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM		0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	
Count Total		7	0	7	7	21	0	0	0	1	1	0	0	1	0	1	0	1	
Peak Hour		3	0	1	1	5	0	0	0	1	1	0	0	0	0	0	0	0	

Four-Hour Count Summaries - Heavy Vehicles																		
Interval Start	West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3
8:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	5
8:15 AM	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	3	8
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
8:45 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	3	9
9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7
9:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	6
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	7
9:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	6
Count Total	0	0	0	7	0	0	0	0	0	2	5	0	0	0	7	0	21	0
Peak Hour	0	0	0	3	0	0	0	0	0	0	1	0	0	0	1	0	5	0

Four-Hour Count Summaries - Bikes																	
Interval Start	West Driveway			East Driveway			Harrison Rd			Harrison Rd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	1			
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
Peak Hour	0	0	0	0	0	0	0	0	0	0	1	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Harrison Rd West Driveway



Three-Hour Count Summaries

Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	1	1	0	0	0	0	0	34	4	0	0	35	0	75	0
4:15 PM		0	0	0	0	0	0	0	0	1	0	28	1	0	0	43	0	73	0
4:30 PM		0	0	0	0	0	0	0	0	0	0	31	1	0	0	34	0	66	0
4:45 PM		0	0	0	0	0	0	0	0	1	1	42	3	0	0	27	0	74	288
Peak Hour	All	0	0	0	1	1	0	0	0	2	1	135	9	0	0	139	0	288	0
	HV	0	0	0	0	0	0	0	0	0	1	3	0	0	0	2	0	6	0
	HV%	-	-	-	0%	0%	-	-	-	0%	100%	2%	0%	-	-	1%	-	2%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	1	0	0	0	0	0	0	1	1	1	3
4:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	4	2	6	0	0	0	0	0	0	1	1	1	3

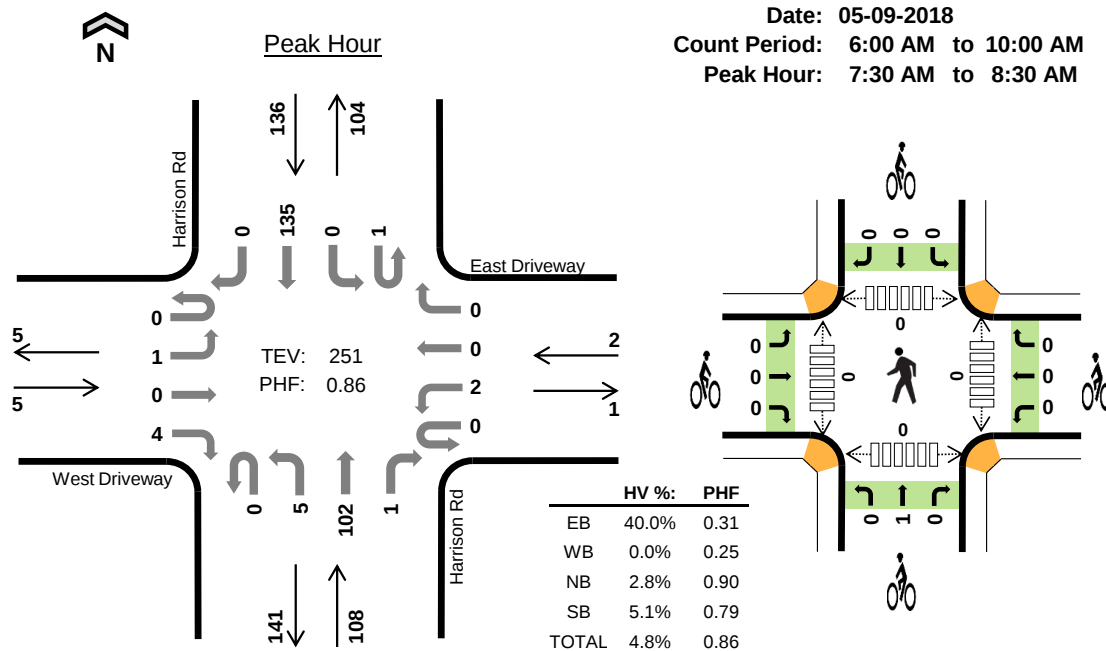
Three-Hour Count Summaries																			
Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM		0	0	0	0	0	1	0	0	0	0	22	0	0	0	23	0	46	0
3:15 PM		0	0	0	1	0	1	0	0	0	1	25	0	0	0	19	1	48	0
3:30 PM		0	0	0	0	0	0	0	0	0	0	28	2	0	0	22	0	52	0
3:45 PM		0	0	0	0	0	1	0	0	0	0	22	0	0	0	23	0	46	192
4:00 PM		0	0	0	1	1	0	0	0	0	0	34	4	0	0	35	0	75	221
4:15 PM		0	0	0	0	0	0	0	0	1	0	28	1	0	0	43	0	73	246
4:30 PM		0	0	0	0	0	0	0	0	0	0	31	1	0	0	34	0	66	260
4:45 PM		0	0	0	0	0	0	0	0	1	1	42	3	0	0	27	0	74	288
5:00 PM		0	0	0	1	0	1	0	0	0	2	26	0	0	0	32	0	62	275
5:15 PM		0	0	0	2	0	1	0	0	0	2	35	1	0	0	25	0	66	268
5:30 PM		0	1	0	1	0	1	0	0	0	0	24	0	0	0	55	0	82	284
5:45 PM		0	0	0	0	0	2	0	0	0	0	27	0	0	0	38	1	68	278
Count Total		0	1	0	6	1	8	0	0	2	6	344	12	0	0	376	2	758	0
Peak Hour	All	0	0	0	1	1	0	0	0	2	1	135	9	0	0	139	0	288	0
	HV	0	0	0	0	0	0	0	0	0	1	3	0	0	0	2	0	6	0
	HV%	-	-	-	0%	0%	-	-	-	0%	100%	2%	0%	-	-	1%	-	2%	0
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.																			
Interval Start		Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)							
		EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total			
3:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM		1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM		0	0	0	0	0	0	0	1	1	2								
4:00 PM		0	0	1	0	1	0	0	0	0	0			0	0	0	0	0	
4:15 PM		0	0	0	1	1	0	0	0	0	0			0	1	1	1	3	
4:30 PM		0	0	0	1	1	0	0	0	0	0			0	0	0	0	0	
4:45 PM		0	0	3	0	3	0	0	0	0	0			0	0	0	0	0	
5:00 PM		0	0	3	0	3	0	0	0	0	0			0	0	0	0	0	
5:15 PM		0	0	3	1	4	0	0	0	0	0			0	0	0	0	0	
5:30 PM		1	0	0	1	2	0	0	0	0	0			0	0	0	0	0	
5:45 PM		0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	
Count Total		2	0	11	4	17	0	0	1	1	2			0	2	1	4	7	
Peak Hour		0	0	4	2	6	0	0	0	0	0			0	1	1	1	3	

Three-Hour Count Summaries - Heavy Vehicles																			
Interval Start	West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
4:45 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3	6
5:00 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3	8
5:15 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	4	11
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	12
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Count Total	0	0	0	2	0	0	0	0	0	6	5	0	0	0	4	0	0	17	0
Peak Hour	0	0	0	0	0	0	0	0	0	1	3	0	0	0	2	0	0	6	0

Three-Hour Count Summaries - Bikes																	
Interval Start	West Driveway			East Driveway			Harrison Rd			Harrison Rd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	2	2	2	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	1	0	0	1	0	2	2	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Harrison Rd West Driveway



Four-Hour Count Summaries

Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:30 AM		0	0	0	0	0	0	0	0	0	1	28	1	0	0	43	0	73	0
7:45 AM		0	0	0	0	0	2	0	0	0	2	28	0	0	0	34	0	66	0
8:00 AM		0	0	0	4	0	0	0	0	0	1	27	0	1	0	28	0	61	0
8:15 AM		0	1	0	0	0	0	0	0	0	1	19	0	0	0	30	0	51	251
Peak Hour	All	0	1	0	4	0	2	0	0	0	5	102	1	1	0	135	0	251	0
	HV	0	0	0	2	0	0	0	0	0	0	3	0	0	0	7	0	12	0
	HV%	-	0%	-	50%	-	0%	-	-	-	0%	3%	0%	0%	-	5%	-	5%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:30 AM	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0
8:00 AM	2	0	1	2	5	0	0	1	0	1	0	0	0	0	0
8:15 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
Peak Hour	2	0	3	7	12	0	0	1	0	1	0	0	0	0	0

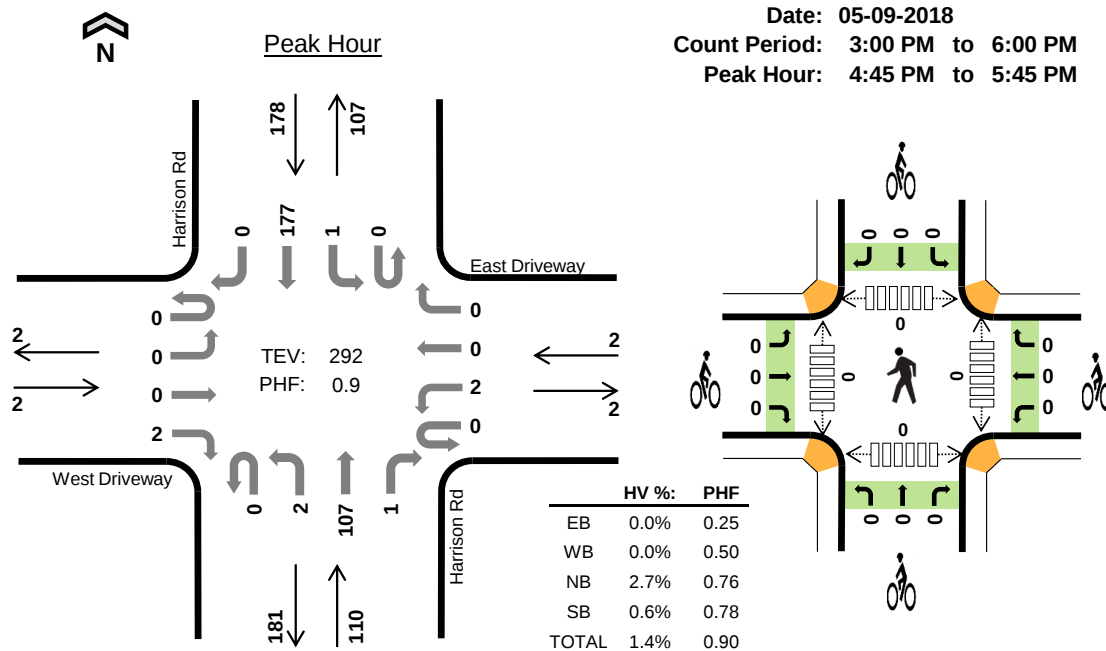
Four-Hour Count Summaries																			
Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM		0	0	0	0	0	1	0	0	0	0	8	0	0	0	19	0	28	0
6:15 AM		0	0	0	0	0	0	0	0	0	0	23	0	0	0	20	0	43	0
6:30 AM		0	0	0	0	0	0	0	0	0	0	14	0	0	0	19	0	33	0
6:45 AM		0	0	0	0	0	2	0	0	0	1	33	0	0	0	20	0	56	160
7:00 AM		0	0	0	1	0	0	0	0	1	0	27	0	0	0	13	0	42	174
7:15 AM		0	0	0	0	0	0	0	0	0	0	24	0	0	0	26	0	50	181
7:30 AM		0	0	0	0	0	0	0	0	0	1	28	1	0	0	43	0	73	221
7:45 AM		0	0	0	0	0	2	0	0	0	2	28	0	0	0	34	0	66	231
8:00 AM		0	0	0	4	0	0	0	0	0	1	27	0	1	0	28	0	61	250
8:15 AM		0	1	0	0	0	0	0	0	0	1	19	0	0	0	30	0	51	251
8:30 AM		0	0	0	1	0	0	0	0	0	0	15	0	0	0	26	0	42	220
8:45 AM		0	0	0	0	0	1	0	0	0	1	17	0	0	1	27	0	47	201
9:00 AM		0	0	0	0	0	0	0	0	0	0	19	0	0	0	16	0	35	175
9:15 AM		0	0	0	1	0	2	0	0	0	0	12	1	0	0	17	0	33	157
9:30 AM		0	0	0	0	0	0	0	0	0	0	19	2	0	0	23	0	44	159
9:45 AM		0	0	0	1	0	1	0	0	0	1	10	0	0	0	18	0	31	143
Count Total		0	1	0	8	0	9	0	0	1	8	323	4	1	1	379	0	735	0
Peak Hour	All	0	1	0	4	0	2	0	0	0	5	102	1	1	0	135	0	251	0
	HV	0	0	0	2	0	0	0	0	0	0	3	0	0	0	7	0	12	0
	HV%	-	0%	-	50%	-	0%	-	-	-	0%	3%	0%	0%	-	5%	-	5%	0
Note: Four-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.																			
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)					Total			
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South					
6:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM		0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM		0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	
6:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM		0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM		0	0	2	0	2	0	0	0	1	1	0	0	1	0	1	0	1	
7:30 AM		0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM		0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM		2	0	1	2	5	0	0	1	0	1	0	0	0	0	0	0	0	
8:15 AM		0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM		1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM		0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM		0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Count Total		3	0	8	12	23	0	0	1	2	3	0	1	1	0	2	0	2	
Peak Hour		2	0	3	7	12	0	0	1	0	1	0	0	0	0	0	0	0	

Four-Hour Count Summaries - Heavy Vehicles																		
Interval Start	West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	5	
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	8	
8:00 AM	0	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0	12	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	12	
8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	11	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	6	
9:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	
9:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	6	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Count Total	0	0	0	3	0	0	0	0	0	0	8	0	0	0	12	0	0	
Peak Hour	0	0	0	2	0	0	0	0	0	0	3	0	0	0	7	0	0	

Four-Hour Count Summaries - Bikes																	
Interval Start	West Driveway			East Driveway			Harrison Rd			Harrison Rd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	2			
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	2			
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	0	0	0	0	1	0	0	2	0	3	0			
Peak Hour	0	0	0	0	0	0	0	1	0	0	0	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Harrison Rd West Driveway



Three-Hour Count Summaries

Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	0	0	0	0	0	0	0	0	0	36	0	0	0	39	0	75	0
5:00 PM		0	0	0	0	0	1	0	0	0	0	24	1	0	0	44	0	70	0
5:15 PM		0	0	0	0	0	0	0	0	0	2	26	0	0	0	38	0	66	0
5:30 PM		0	0	0	2	0	1	0	0	0	0	21	0	0	1	56	0	81	292
Peak Hour	All	0	0	0	2	0	2	0	0	0	2	107	1	0	1	177	0	292	0
	HV	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0	4	0
	HV%	-	-	-	0%	-	0%	-	-	-	50%	2%	0%	-	0%	1%	-	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	3	1	4	0	0	0	0	0	0	0	0	0	0

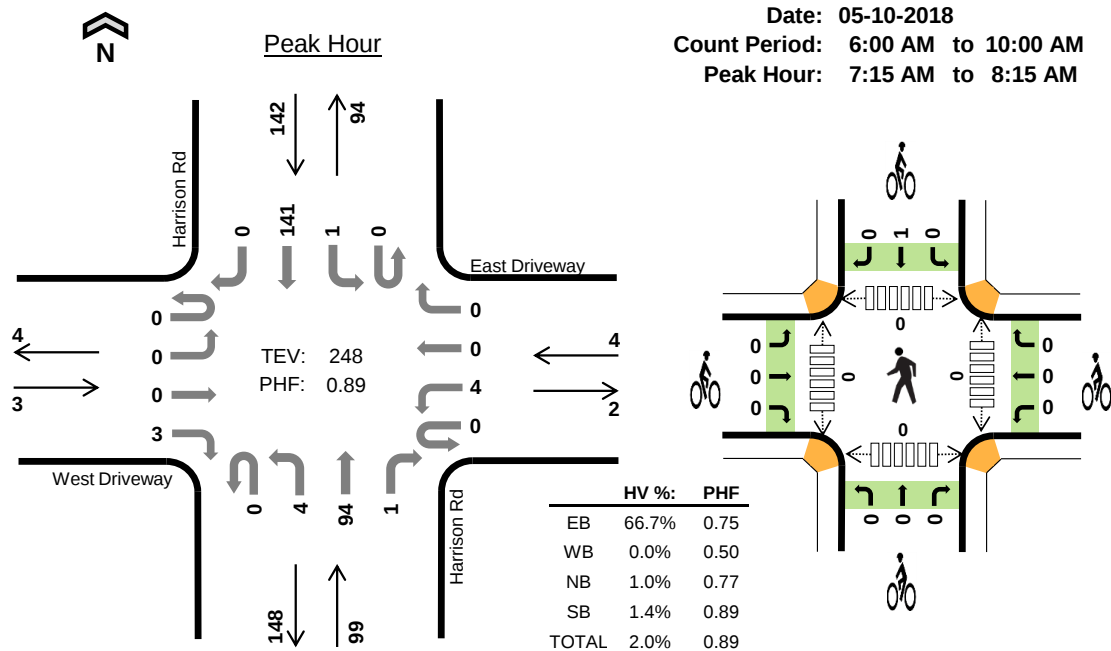
Three-Hour Count Summaries																			
Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM		0	0	0	1	0	1	0	0	0	1	23	2	0	0	27	0	55	0
3:15 PM		0	0	0	0	0	2	0	0	0	0	34	0	0	0	27	0	63	0
3:30 PM		0	0	0	0	0	0	0	0	0	0	29	0	0	0	29	0	58	0
3:45 PM		0	0	0	0	0	0	0	0	0	0	30	0	0	0	26	0	56	232
4:00 PM		0	0	0	0	0	0	0	0	0	0	26	0	0	0	34	0	60	237
4:15 PM		0	0	0	0	0	0	0	0	0	1	29	3	0	0	37	0	70	244
4:30 PM		0	0	0	1	0	0	0	0	0	0	19	1	0	0	29	0	50	236
4:45 PM		0	0	0	0	0	0	0	0	0	0	36	0	0	0	39	0	75	255
5:00 PM		0	0	0	0	0	1	0	0	0	0	24	1	0	0	44	0	70	265
5:15 PM		0	0	0	0	0	0	0	0	0	2	26	0	0	0	38	0	66	261
5:30 PM		0	0	0	2	0	1	0	0	0	0	21	0	0	1	56	0	81	292
5:45 PM		0	0	0	0	0	1	0	0	0	1	33	0	0	0	34	0	69	286
Count Total		0	0	0	4	0	6	0	0	0	5	330	7	0	1	420	0	773	0
Peak Hour	All	0	0	0	2	0	2	0	0	0	2	107	1	0	1	177	0	292	0
	HV	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0	4	0
	HV%	-	-	-	0%	-	0%	-	-	-	50%	2%	0%	-	0%	1%	-	1%	0
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.																			
Interval Start		Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)							
		EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total			
3:00 PM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM		0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM		0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM		0	0	1	1	2	0	0	1	0	1	0	1	0	1	1	1	3	
4:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM		0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM		0	0	1	0	1	0	0	1	0	1	2	0	0	0	2	4	4	
Count Total		0	0	8	5	13	0	0	2	0	2	2	1	1	3	7	7	7	
Peak Hour		0	0	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	

Three-Hour Count Summaries - Heavy Vehicles																		
Interval Start	West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	5
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	5
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	7
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	4
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	4
Count Total	0	0	0	0	0	0	0	0	0	3	5	0	0	0	5	0	13	0
Peak Hour	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0	4	0

Three-Hour Count Summaries - Bikes																		
Interval Start	West Driveway			East Driveway			Harrison Rd			Harrison Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1				
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1				
Count Total	0	0	0	0	0	0	0	2	0	0	0	0	2	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Harrison Rd West Driveway



Four-Hour Count Summaries

Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:15 AM		0	0	0	1	0	0	0	0	0	1	17	0	0	0	32	0	51	0
7:30 AM		0	0	0	1	0	2	0	0	0	0	20	0	0	0	40	0	63	0
7:45 AM		0	0	0	1	0	2	0	0	0	1	28	0	0	1	37	0	70	0
8:00 AM		0	0	0	0	0	0	0	0	0	2	29	1	0	0	32	0	64	248
Peak Hour	All	0	0	0	3	0	4	0	0	0	4	94	1	0	1	141	0	248	0
	HV	0	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0	5	0
	HV%	-	-	-	67%	-	0%	-	-	-	0%	1%	0%	-	0%	1%	-	2%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:15 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
7:30 AM	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
Peak Hour	2	0	1	2	5	0	0	0	1	1	0	0	0	0	0

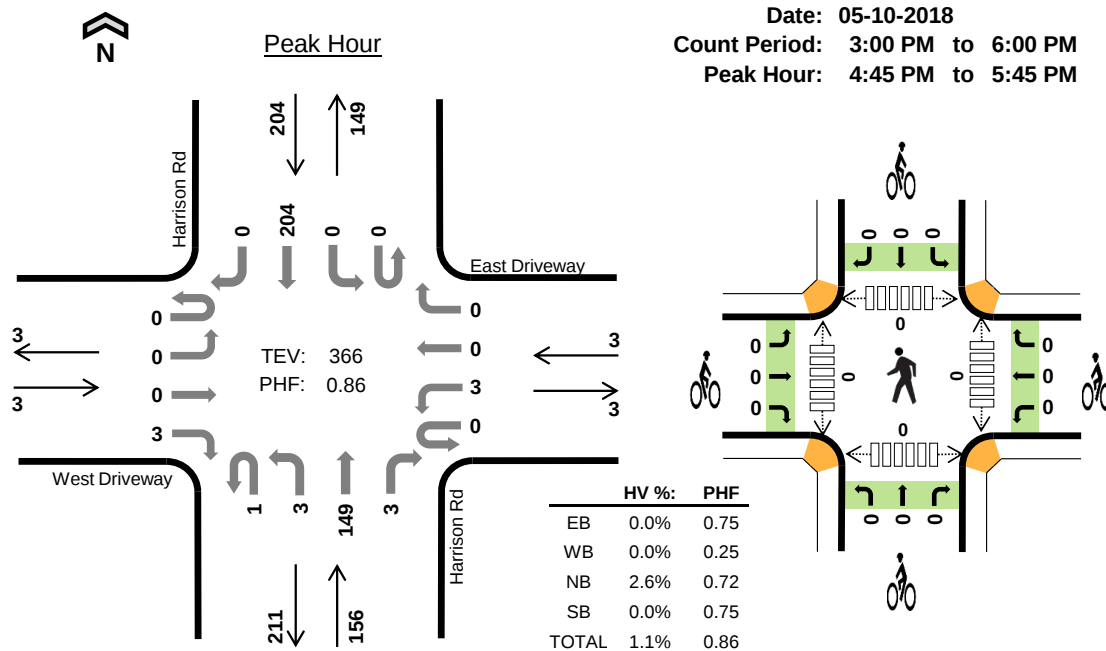
Four-Hour Count Summaries																			
Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM		0	0	0	0	0	1	0	0	1	0	8	0	0	0	19	0	29	0
6:15 AM		0	0	0	0	0	0	0	0	0	0	24	0	0	0	16	0	40	0
6:30 AM		0	0	0	0	0	0	0	0	0	1	19	0	0	0	19	0	39	0
6:45 AM		0	0	0	0	0	1	0	0	0	0	28	0	0	0	21	0	50	158
7:00 AM		0	0	0	1	0	1	0	0	0	1	26	0	0	0	18	0	47	176
7:15 AM		0	0	0	1	0	0	0	0	0	1	17	0	0	0	32	0	51	187
7:30 AM		0	0	0	1	0	2	0	0	0	0	20	0	0	0	40	0	63	211
7:45 AM		0	0	0	1	0	2	0	0	0	1	28	0	0	1	37	0	70	231
8:00 AM		0	0	0	0	0	0	0	0	0	2	29	1	0	0	32	0	64	248
8:15 AM		0	0	0	0	0	0	0	0	0	0	16	1	0	0	19	0	36	233
8:30 AM		0	0	0	2	0	0	0	2	0	1	17	0	0	1	15	0	38	208
8:45 AM		0	0	0	0	0	1	0	0	0	1	19	0	0	0	28	0	49	187
9:00 AM		0	0	0	0	0	0	0	0	0	0	18	1	1	0	28	0	48	171
9:15 AM		0	0	0	0	0	1	0	0	0	0	19	0	0	0	28	0	48	183
9:30 AM		0	1	0	0	0	0	0	0	0	0	13	0	0	0	25	1	40	185
9:45 AM		0	0	0	0	0	0	0	0	0	0	14	0	0	0	16	0	30	166
Count Total		0	1	0	6	0	9	0	2	1	8	315	3	1	2	393	1	742	0
Peak Hour	All	0	0	0	3	0	4	0	0	0	4	94	1	0	1	141	0	248	0
	HV	0	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0	5	0
	HV%	-	-	-	67%	-	0%	-	-	-	0%	1%	0%	-	0%	1%	-	2%	0
Note: Four-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.																			
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)								
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total				
6:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:15 AM		0	0	0	1	1	0	0	0	0	0	0	0	0	0	0			
6:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2		
6:45 AM		0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0		
7:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM		0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0		
7:30 AM		1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM		1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		
8:00 AM		0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0		
8:15 AM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0		
8:30 AM		2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0		
8:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 AM		0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0		
9:15 AM		0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0		
9:30 AM		1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		
9:45 AM		0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0		
Count Total		5	1	4	8	18	0	0	0	2	2	0	0	2	0	2			
Peak Hour		2	0	1	2	5	0	0	0	1	1	0	0	0	0	0	0		

Four-Hour Count Summaries - Heavy Vehicles																			
Interval Start	West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3
7:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	5
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	6
8:30 AM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	7
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	6
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	6
9:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	7
Count Total	0	1	0	4	0	0	0	1	0	0	0	4	0	0	0	8	0	18	0
Peak Hour	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	2	0	5	0

Four-Hour Count Summaries - Bikes																	
Interval Start	West Driveway			East Driveway			Harrison Rd			Harrison Rd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Harrison Rd West Driveway



Three-Hour Count Summaries

Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	0	0	0	0	0	0	0	0	2	51	1	0	0	38	0	92	0
5:00 PM		0	0	0	1	0	0	0	0	0	0	27	1	0	0	48	0	77	0
5:15 PM		0	0	0	1	0	3	0	0	1	0	34	1	0	0	50	0	90	0
5:30 PM		0	0	0	1	0	0	0	0	0	1	37	0	0	0	68	0	107	366
Peak Hour	All	0	0	0	3	0	3	0	0	1	3	149	3	0	0	204	0	366	0
	HV	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4	0
	HV%	-	-	-	0%	-	0%	-	-	0%	67%	1%	0%	-	-	0%	-	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0

Three-Hour Count Summaries																			
Interval Start		West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM		0	0	0	0	0	2	0	0	0	0	22	2	0	0	39	0	65	
3:15 PM		0	0	0	0	0	0	0	0	0	0	24	0	0	0	29	0	53	
3:30 PM		0	0	0	0	0	0	0	0	0	1	39	2	0	0	26	0	68	
3:45 PM		0	0	0	1	0	2	0	0	0	0	25	2	0	0	28	1	59	
4:00 PM		0	0	0	0	0	1	0	0	0	0	28	1	0	0	49	0	79	
4:15 PM		0	0	0	1	0	1	0	0	0	0	34	0	0	0	35	0	71	
4:30 PM		0	0	0	0	0	0	0	0	0	0	38	2	0	0	48	0	88	
4:45 PM		0	0	0	0	0	0	0	0	0	2	51	1	0	0	38	0	92	
5:00 PM		0	0	0	1	0	0	0	0	0	0	27	1	0	0	48	0	77	
5:15 PM		0	0	0	1	0	3	0	0	1	0	34	1	0	0	50	0	90	
5:30 PM		0	0	0	1	0	0	0	0	0	1	37	0	0	0	68	0	107	
5:45 PM		0	0	0	2	0	1	0	0	0	1	36	0	0	0	37	0	77	
Count Total		0	0	0	7	0	10	0	0	1	5	395	12	0	0	495	1	926	
Peak Hour	All	0	0	0	3	0	3	0	0	1	3	149	3	0	0	204	0	366	
	HV	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4	
	HV%	-	-	-	0%	-	0%	-	-	0%	67%	1%	0%	-	-	0%	-	1%	
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.																			
Interval Start		Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)							
		EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total			
3:00 PM		0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	
3:15 PM		0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM		0	0	1	1	2	0	0	1	0	1	0	0	0	0	3	3	3	
4:00 PM		0	0	3	0	3	0	0	0	1	1	0	0	0	0	0	0	0	
4:15 PM		0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	2	2	
4:30 PM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM		0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM		0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM		0	0	1	1	2	0	0	0	0	0	0	0	0	2	0	0	2	
Count Total		0	0	12	5	17	0	0	1	2	3	0	3	0	4	7	7	7	
Peak Hour		0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	

Three-Hour Count Summaries - Heavy Vehicles																		
Interval Start	West Driveway				East Driveway				Harrison Rd				Harrison Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	6
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3	8
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	6
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7
4:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	7
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	4
Count Total	0	0	0	0	0	0	0	0	0	3	8	1	0	0	5	0	17	0
Peak Hour	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4	0

Three-Hour Count Summaries - Bikes																		
Interval Start	West Driveway			East Driveway			Harrison Rd			Harrison Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0				
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	2				
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	2				
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2				
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2				
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Count Total	0	0	0	0	0	0	0	1	0	0	2	0	3	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

APPENDIX C

Intersection Level of Service Calculations

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	4	6	0	0	4	94	3	1	138	0
Future Vol, veh/h	0	0	4	6	0	0	4	94	3	1	138	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	75	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	7	0	0	4	102	3	1	150	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	264	265	150	266	264	104	150	0	0	105	0	0
Stage 1	152	152	-	112	112	-	-	-	-	-	-	-
Stage 2	112	113	-	154	152	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.95	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.975	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	689	640	736	687	641	951	1431	-	-	1486	-	-
Stage 1	850	772	-	893	803	-	-	-	-	-	-	-
Stage 2	893	802	-	848	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	687	637	736	681	638	951	1431	-	-	1486	-	-
Mov Cap-2 Maneuver	687	637	-	681	638	-	-	-	-	-	-	-
Stage 1	847	771	-	890	801	-	-	-	-	-	-	-
Stage 2	890	800	-	842	771	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.9		10.3		0.3		0.1					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1431	-	-	736	681	1486	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.006	0.01	0.001	-	-				
HCM Control Delay (s)	7.5	0	-	9.9	10.3	7.4	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

HCM 2010 TWSC
1: Harrison Road & Hildebrand

06/10/2018

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	2	1	0	0	0	135	9	0	139	0
Future Vol, veh/h	0	0	2	1	0	0	0	135	9	0	139	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	75	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	1	0	0	0	147	10	0	151	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	303	308	151	304	303	152	151	0	0	157	0	0
Stage 1	151	151	-	152	152	-	-	-	-	-	-	-
Stage 2	152	157	-	152	151	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.95	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.975	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	649	606	735	648	610	894	1430	-	-	1423	-	-
Stage 1	851	772	-	850	772	-	-	-	-	-	-	-
Stage 2	850	768	-	850	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	649	606	735	646	610	894	1430	-	-	1423	-	-
Mov Cap-2 Maneuver	649	606	-	646	610	-	-	-	-	-	-	-
Stage 1	851	772	-	850	772	-	-	-	-	-	-	-
Stage 2	850	768	-	847	772	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.6	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1430	-	-	735	646	1423	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.002	-	-	-
HCM Control Delay (s)	0	-	-	9.9	10.6	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	8	6	0	0	8	94	3	1	138	0
Future Vol, veh/h	0	0	8	6	0	0	8	94	3	1	138	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	75	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	9	7	0	0	9	102	3	1	150	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	274	275	150	279	274	104	150	0	0	105	0	0
Stage 1	152	152	-	122	122	-	-	-	-	-	-	-
Stage 2	122	123	-	157	152	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.95	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.975	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	678	632	736	673	633	951	1431	-	-	1486	-	-
Stage 1	850	772	-	882	795	-	-	-	-	-	-	-
Stage 2	882	794	-	845	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	674	627	736	661	628	951	1431	-	-	1486	-	-
Mov Cap-2 Maneuver	674	627	-	661	628	-	-	-	-	-	-	-
Stage 1	844	771	-	876	789	-	-	-	-	-	-	-
Stage 2	876	788	-	834	771	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.5	0.6	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1431	-	-	736	661	1486	-
HCM Lane V/C Ratio	0.006	-	-	0.012	0.01	0.001	-
HCM Control Delay (s)	7.5	0	-	10	10.5	7.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

HCM 2010 TWSC
1: Harrison Road & Hildebrand

06/10/2018

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	4	1	0	0	0	135	9	0	139	0
Future Vol, veh/h	0	0	4	1	0	0	0	135	9	0	139	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	75	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	1	0	0	0	147	10	0	151	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	303	308	151	305	303	152	151	0	0	157	0	0
Stage 1	151	151	-	152	152	-	-	-	-	-	-	-
Stage 2	152	157	-	153	151	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.95	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.975	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	649	606	735	647	610	894	1430	-	-	1423	-	-
Stage 1	851	772	-	850	772	-	-	-	-	-	-	-
Stage 2	850	768	-	849	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	649	606	735	643	610	894	1430	-	-	1423	-	-
Mov Cap-2 Maneuver	649	606	-	643	610	-	-	-	-	-	-	-
Stage 1	851	772	-	850	772	-	-	-	-	-	-	-
Stage 2	850	768	-	844	772	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.9		10.6		0		0					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1430	-	-	735	643	1423	-	-				
HCM Lane V/C Ratio	-	-	-	0.006	0.002	-	-	-				
HCM Control Delay (s)	0	-	-	9.9	10.6	0	-	-				
HCM Lane LOS	A	-	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

HCM 2010 TWSC
1: Harrison Road & Hildebrand

06/10/2018

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	8	6	0	0	8	440	3	1	547	0
Future Vol, veh/h	0	0	8	6	0	0	8	440	3	1	547	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	75	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	9	7	0	0	9	478	3	1	595	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1095	1096	595	1100	1095	480	595	0	0	481	0	0
Stage 1	597	597	-	498	498	-	-	-	-	-	-	-
Stage 2	498	499	-	602	597	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.95	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.975	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	191	213	392	190	214	586	981	-	-	1082	-	-
Stage 1	490	491	-	554	544	-	-	-	-	-	-	-
Stage 2	554	544	-	486	491	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	189	210	392	184	211	586	981	-	-	1082	-	-
Mov Cap-2 Maneuver	189	210	-	184	211	-	-	-	-	-	-	-
Stage 1	484	491	-	547	537	-	-	-	-	-	-	-
Stage 2	547	537	-	475	491	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.4		25.3		0.2		0					
HCM LOS	B		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	981	-	-	392	184	1082	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.022	0.035	0.001	-	-				
HCM Control Delay (s)	8.7	0	-	14.4	25.3	8.3	0	-				
HCM Lane LOS	A	A	-	B	D	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

Intersection														
Int Delay, s/veh	0.1													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		↕			↕			↕			↕			
Traffic Vol, veh/h	0	0	4	1	0	0	0	670	9	0	442	0		
Future Vol, veh/h	0	0	4	1	0	0	0	670	9	0	442	0		
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0		
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free		
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None		
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-		
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-		
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-		
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92		
Heavy Vehicles, %	2	2	75	2	2	2	2	2	2	2	2	2		
Mvmt Flow	0	0	4	1	0	0	0	728	10	0	480	0		
Major/Minor	Minor2		Minor1		Major1		Major2							
Conflicting Flow All	1213	1218	480	1215	1213	733	480	0	0	738	0	0		
Stage 1	480	480	-	733	733	-	-	-	-	-	-	-		
Stage 2	733	738	-	482	480	-	-	-	-	-	-	-		
Critical Hdwy	7.12	6.52	6.95	7.12	6.52	6.22	4.12	-	-	4.12	-	-		
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-		
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-		
Follow-up Hdwy	3.518	4.018	3.975	3.518	4.018	3.318	2.218	-	-	2.218	-	-		
Pot Cap-1 Maneuver	159	181	462	158	182	421	1082	-	-	868	-	-		
Stage 1	567	554	-	412	426	-	-	-	-	-	-	-		
Stage 2	412	424	-	565	554	-	-	-	-	-	-	-		
Platoon blocked, %								-	-		-	-		
Mov Cap-1 Maneuver	159	181	462	157	182	421	1082	-	-	868	-	-		
Mov Cap-2 Maneuver	159	181	-	157	182	-	-	-	-	-	-	-		
Stage 1	567	554	-	412	426	-	-	-	-	-	-	-		
Stage 2	412	424	-	560	554	-	-	-	-	-	-	-		
Approach	EB		WB		NB		SB							
HCM Control Delay, s	12.9		28.1		0		0							
HCM LOS	B		D											
Minor Lane/Major Mvmt	NBL		NBT		NBR		EBLn1WBLn1		SBL		SBT		SBR	
Capacity (veh/h)	1082		-		-		462 157		868		-		-	
HCM Lane V/C Ratio	-		-		-		0.009 0.007		-		-		-	
HCM Control Delay (s)	0		-		-		12.9 28.1		0		-		-	
HCM Lane LOS	A		-		-		B D		A		-		-	
HCM 95th %tile Q(veh)	0		-		-		0 0		0		-		-	

HCM 2010 Signalized Intersection Summary

2: Harrison Rd & Sala Rd

Cumulative AM
Unmitigated

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	529	367	517	209	305	543		
Future Volume (veh/h)	529	367	517	209	305	543		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	575	399	562	227	332	590		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	226	202	626	1206	340	289		
Arrive On Green	0.13	0.13	0.35	0.65	0.18	0.18		
Sat Flow, veh/h	1774	1583	1774	1863	1863	1583		
Grp Volume(v), veh/h	575	399	562	227	332	590		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1583		
Q Serve(g_s), s	5.1	5.1	12.0	2.0	7.1	7.3		
Cycle Q Clear(g_c), s	5.1	5.1	12.0	2.0	7.1	7.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	226	202	626	1206	340	289		
V/C Ratio(X)	2.54	1.98	0.90	0.19	0.98	2.04		
Avail Cap(c_a), veh/h	226	202	643	1206	340	289		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.4	17.5	12.3	2.8	16.3	16.4		
Incr Delay (d2), s/veh	706.8	456.8	15.3	0.3	43.5	481.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	46.9	29.8	8.4	1.1	7.7	44.4		
LnGrp Delay(d),s/veh	724.3	474.2	27.6	3.2	59.7	497.9		
LnGrp LOS	F	F	C	A	E	F		
Approach Vol, veh/h	974			789	922			
Approach Delay, s/veh	621.8			20.5	340.1			
Approach LOS	F			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.4		9.6	18.6	11.8		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		25.9		5.1	14.5	6.9		
Max Q Clear Time (g_c+I1), s		4.0		7.1	14.0	9.3		
Green Ext Time (p_c), s		1.2		0.0	0.1	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			348.4					
HCM 2010 LOS			F					

HCM 2010 Signalized Intersection Summary

2: Harrison Rd & Sala Rd

Cumulative Plus Project AM
Mitigated

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	529	367	517	209	305	543		
Future Volume (veh/h)	529	367	517	209	305	543		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	575	399	562	227	332	590		
Adj No. of Lanes	2	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	898	748	729	1869	745	746		
Arrive On Green	0.26	0.26	0.21	0.53	0.21	0.21		
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583		
Grp Volume(v), veh/h	575	399	562	227	332	590		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583		
Q Serve(g_s), s	6.3	7.6	6.6	1.4	3.5	9.0		
Cycle Q Clear(g_c), s	6.3	7.6	6.6	1.4	3.5	9.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	898	748	729	1869	745	746		
V/C Ratio(X)	0.64	0.53	0.77	0.12	0.45	0.79		
Avail Cap(c_a), veh/h	1090	837	848	1869	745	746		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.0	7.9	15.8	5.1	14.7	9.5		
Incr Delay (d2), s/veh	0.9	0.6	3.8	0.1	1.9	8.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.1	7.3	3.4	0.7	1.9	12.3		
LnGrp Delay(d),s/veh	14.9	8.5	19.6	5.2	16.6	17.9		
LnGrp LOS	B	A	B	A	B	B		
Approach Vol, veh/h	974			789	922			
Approach Delay, s/veh	12.3			15.5	17.4			
Approach LOS	B			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		27.0		15.6	13.5	13.5		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		22.5		13.5	10.5	7.5		
Max Q Clear Time (g_c+I1), s		3.4		9.6	8.6	11.0		
Green Ext Time (p_c), s		1.3		1.5	0.5	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			15.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

2: Harrison Rd & Sala Rd

Cumulative Plus Project AM

Unmitigated

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	531	367	517	211	307	545		
Future Volume (veh/h)	531	367	517	211	307	545		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	577	399	562	229	334	592		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	226	202	626	1206	340	289		
Arrive On Green	0.13	0.13	0.35	0.65	0.18	0.18		
Sat Flow, veh/h	1774	1583	1774	1863	1863	1583		
Grp Volume(v), veh/h	577	399	562	229	334	592		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1583		
Q Serve(g_s), s	5.1	5.1	12.0	2.0	7.1	7.3		
Cycle Q Clear(g_c), s	5.1	5.1	12.0	2.0	7.1	7.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	226	202	626	1206	340	289		
V/C Ratio(X)	2.55	1.98	0.90	0.19	0.98	2.05		
Avail Cap(c_a), veh/h	226	202	643	1206	340	289		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.4	17.5	12.3	2.8	16.3	16.4		
Incr Delay (d2), s/veh	710.8	456.8	15.3	0.3	44.8	484.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	47.1	29.8	8.4	1.1	7.8	44.6		
LnGrp Delay(d),s/veh	728.2	474.2	27.6	3.2	61.1	500.9		
LnGrp LOS	F	F	C	A	E	F		
Approach Vol, veh/h	976			791	926			
Approach Delay, s/veh	624.4			20.5	342.3			
Approach LOS	F			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.4		9.6	18.6	11.8		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		25.9		5.1	14.5	6.9		
Max Q Clear Time (g_c+I1), s		4.0		7.1	14.0	9.3		
Green Ext Time (p_c), s		1.2		0.0	0.1	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			350.0					
HCM 2010 LOS			F					

HCM 2010 Signalized Intersection Summary

2: Harrison Rd & Sala Rd

Cumulative Plus Project AM
Unmitigated

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	531	367	517	211	307	545		
Future Volume (veh/h)	531	367	517	211	307	545		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	577	399	562	229	334	592		
Adj No. of Lanes	2	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	898	749	729	1868	745	746		
Arrive On Green	0.26	0.26	0.21	0.53	0.21	0.21		
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583		
Grp Volume(v), veh/h	577	399	562	229	334	592		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583		
Q Serve(g_s), s	6.3	7.6	6.6	1.4	3.5	9.0		
Cycle Q Clear(g_c), s	6.3	7.6	6.6	1.4	3.5	9.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	898	749	729	1868	745	746		
V/C Ratio(X)	0.64	0.53	0.77	0.12	0.45	0.79		
Avail Cap(c_a), veh/h	1090	837	848	1868	745	746		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.0	7.9	15.8	5.1	14.7	9.5		
Incr Delay (d2), s/veh	0.9	0.6	3.8	0.1	1.9	8.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.1	7.3	3.4	0.7	1.9	12.4		
LnGrp Delay(d),s/veh	14.9	8.5	19.6	5.2	16.6	18.0		
LnGrp LOS	B	A	B	A	B	B		
Approach Vol, veh/h	976			791	926			
Approach Delay, s/veh	12.3			15.4	17.5			
Approach LOS	B			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		27.0		15.6	13.5	13.5		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		22.5		13.5	10.5	7.5		
Max Q Clear Time (g_c+I1), s		3.4		9.6	8.6	11.0		
Green Ext Time (p_c), s		1.3		1.5	0.5	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			15.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

2: Harrison Rd & Sala Rd

Cumulative PM
Umitigated

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	685	590	397	326	309	561		
Future Volume (veh/h)	685	590	397	326	309	561		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	745	641	432	354	336	610		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	244	218	497	1188	456	387		
Arrive On Green	0.14	0.14	0.28	0.64	0.24	0.24		
Sat Flow, veh/h	1774	1583	1774	1863	1863	1583		
Grp Volume(v), veh/h	745	641	432	354	336	610		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1583		
Q Serve(g_s), s	5.5	5.5	9.3	3.4	6.6	9.8		
Cycle Q Clear(g_c), s	5.5	5.5	9.3	3.4	6.6	9.8		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	244	218	497	1188	456	387		
V/C Ratio(X)	3.05	2.94	0.87	0.30	0.74	1.58		
Avail Cap(c_a), veh/h	244	218	510	1188	456	387		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.3	17.3	13.7	3.2	13.9	15.1		
Incr Delay (d2), s/veh	935.2	887.3	14.6	0.6	10.2	270.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	66.0	58.1	6.5	1.9	4.7	36.6		
LnGrp Delay(d),s/veh	952.5	904.5	28.3	3.9	24.1	286.0		
LnGrp LOS	F	F	C	A	C	F		
Approach Vol, veh/h	1386			786	946			
Approach Delay, s/veh	930.3			17.3	193.0			
Approach LOS	F			B	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.0		10.0	15.7	14.3		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		25.5		5.5	11.5	9.5		
Max Q Clear Time (g_c+I1), s		5.4		7.5	11.3	11.8		
Green Ext Time (p_c), s		2.1		0.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			476.4					
HCM 2010 LOS			F					

HCM 2010 Signalized Intersection Summary

2: Harrison Rd & Sala Rd

Cumulative PM
Mitigated

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	685	590	397	326	309	561		
Future Volume (veh/h)	685	590	397	326	309	561		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	745	641	432	354	336	610		
Adj No. of Lanes	2	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	972	724	602	1743	726	772		
Arrive On Green	0.28	0.28	0.18	0.49	0.20	0.20		
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583		
Grp Volume(v), veh/h	745	641	432	354	336	610		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583		
Q Serve(g_s), s	7.9	11.3	4.7	2.3	3.3	8.2		
Cycle Q Clear(g_c), s	7.9	11.3	4.7	2.3	3.3	8.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	972	724	602	1743	726	772		
V/C Ratio(X)	0.77	0.88	0.72	0.20	0.46	0.79		
Avail Cap(c_a), veh/h	972	724	731	1743	726	772		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.1	9.9	15.6	5.7	14.0	8.5		
Incr Delay (d2), s/veh	3.7	12.6	2.7	0.3	2.1	8.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.2	13.3	2.4	1.1	1.8	11.8		
LnGrp Delay(d),s/veh	16.9	22.5	18.2	6.0	16.1	16.6		
LnGrp LOS	B	C	B	A	B	B		
Approach Vol, veh/h	1386			786	946			
Approach Delay, s/veh	19.5			12.7	16.4			
Approach LOS	B			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.2		15.8	11.5	12.7		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		19.7		11.3	8.5	6.7		
Max Q Clear Time (g_c+I1), s		4.3		13.3	6.7	10.2		
Green Ext Time (p_c), s		2.0		0.0	0.3	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			16.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

2: Harrison Rd & Sala Rd

Cumulative Plus Project
Unmitigated

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	685	590	397	326	310	562		
Future Volume (veh/h)	685	590	397	326	310	562		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	745	641	432	354	337	611		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	244	218	497	1188	456	387		
Arrive On Green	0.14	0.14	0.28	0.64	0.24	0.24		
Sat Flow, veh/h	1774	1583	1774	1863	1863	1583		
Grp Volume(v), veh/h	745	641	432	354	337	611		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1583		
Q Serve(g_s), s	5.5	5.5	9.3	3.4	6.7	9.8		
Cycle Q Clear(g_c), s	5.5	5.5	9.3	3.4	6.7	9.8		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	244	218	497	1188	456	387		
V/C Ratio(X)	3.05	2.94	0.87	0.30	0.74	1.58		
Avail Cap(c_a), veh/h	244	218	510	1188	456	387		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.3	17.3	13.7	3.2	13.9	15.1		
Incr Delay (d2), s/veh	935.2	887.3	14.6	0.6	10.3	272.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	66.0	58.1	6.5	1.9	4.7	36.7		
LnGrp Delay(d),s/veh	952.5	904.5	28.3	3.9	24.2	287.2		
LnGrp LOS	F	F	C	A	C	F		
Approach Vol, veh/h	1386			786	948			
Approach Delay, s/veh	930.3			17.3	193.7			
Approach LOS	F			B	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.0		10.0	15.7	14.3		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		25.5		5.5	11.5	9.5		
Max Q Clear Time (g_c+I1), s		5.4		7.5	11.3	11.8		
Green Ext Time (p_c), s		2.1		0.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			476.5					
HCM 2010 LOS			F					

HCM 2010 Signalized Intersection Summary

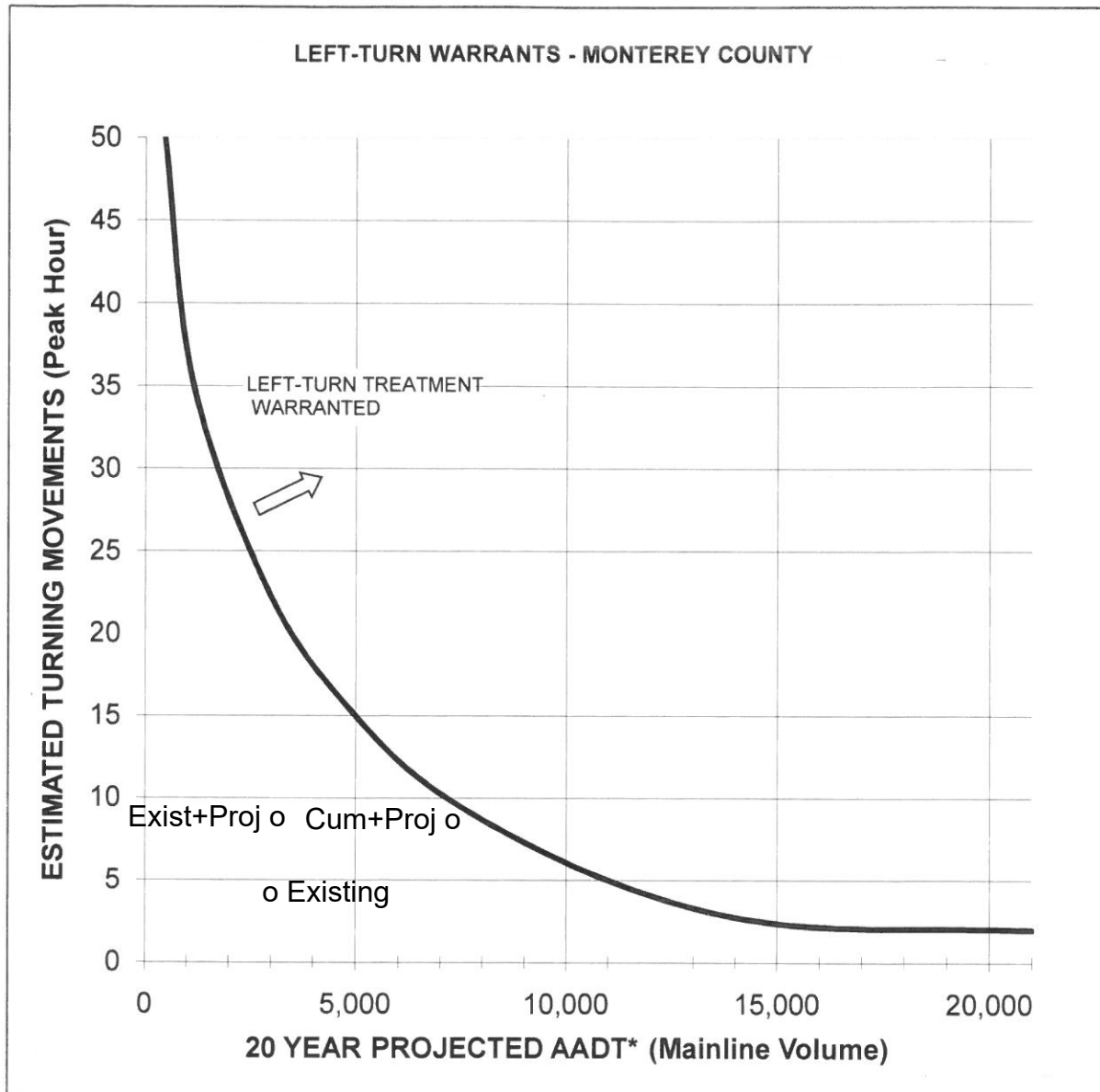
2: Harrison Rd & Sala Rd

Cumulative Plus Project

Mitigated

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	685	590	397	326	310	562		
Future Volume (veh/h)	685	590	397	326	310	562		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	745	641	432	354	337	611		
Adj No. of Lanes	2	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	998	732	594	1876	947	883		
Arrive On Green	0.29	0.29	0.17	0.53	0.27	0.27		
Sat Flow, veh/h	3442	1583	3442	3632	3632	1583		
Grp Volume(v), veh/h	745	641	432	354	337	611		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1770	1770	1583		
Q Serve(g_s), s	9.8	14.5	5.9	2.6	3.9	13.4		
Cycle Q Clear(g_c), s	9.8	14.5	5.9	2.6	3.9	13.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	998	732	594	1876	947	883		
V/C Ratio(X)	0.75	0.88	0.73	0.19	0.36	0.69		
Avail Cap(c_a), veh/h	998	732	860	1876	947	883		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.1	12.1	19.6	6.1	14.8	8.0		
Incr Delay (d2), s/veh	3.1	11.5	1.8	0.2	1.0	4.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.1	15.9	3.0	1.3	2.0	13.2		
LnGrp Delay(d),s/veh	19.2	23.7	21.3	6.4	15.9	12.4		
LnGrp LOS	B	C	C	A	B	B		
Approach Vol, veh/h	1386			786	948			
Approach Delay, s/veh	21.3			14.6	13.6			
Approach LOS	C			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		31.0		19.0	13.1	17.9		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		26.5		14.5	12.5	9.5		
Max Q Clear Time (g_c+I1), s		4.6		16.5	7.9	15.4		
Green Ext Time (p_c), s		2.3		0.0	0.7	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			17.3					
HCM 2010 LOS			B					

Appendix D
Left Turn Lane Warrant
Northbound Harrison Road at
Project Driveway



Adapted from Monterey County
Left Turn Policy, adopted on
February 26, 1980.