ST. MICHAEL'S DRIVE TRAFFIC STUDY

Additional RSA Analysis of New Mexico Rail Runner / Santa Fe Rail Trail Crossing

Final Report
August 2015

Prepared For:

NMDOT

Prepared By:

LEE ENGINEERING

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New Mexico Department of Transportation (NMDOT)

Submitted by:

Lee Engineering, LLC

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Executive Summary

Introduction

On November 2014, a Road Safety Audit was conducted for the uncontrolled multi-use trail pedestrian/bicycle crossing of St. Michael's Drive at the Santa Fe Rail Road Crossing located approximately 550 feet west of the Calle Lorca signalized intersection. The NMDOT requested Lee Engineering to conduct further study focusing on traffic analysis for the corridor of St. Michael's Drive (NM 466) for NMDOT-Traffic Technical Support Bureau and the long-term feasibility of an underpass design. The purpose of this analysis was to provide detailed traffic analysis, detailed operations description of potential traffic control devices and rail operations, and a preliminary investigation of design considerations for a future multi-use trail underpass.

The following detailed traffic analyses includes the following:

- Background discussion of previous study conclusions and recommendations
- Field observation of the study area
- Traffic data collection (from City of Santa Fe MPO)
- Capacity analyses for existing conditions and for the potential traffic control alternatives
- Capacity analyses for road diet
- Discussion of potential design alternatives including:
    - Alternative 3A – Pedestrian Hybrid Beacon
    - Alternative 3B – Pedestrian Signal
    - Alternative 6 – Pedestrian Tunnel

Conclusions and Recommendations

The following findings/recommendations are based on the analysis conducted in this report:

- Traffic volumes on St. Michael's have declined significantly since 2008 mainly due to a coinciding recession. Only since 2014 has traffic demands started growing again and thus have not yet reached the levels observed in 2006.
- All study intersections are operating at LOC C or better for all peak hour periods under existing timing plans.
- The majority of study intersection approaches are currently operating at LOS D or better except for the north and south approaches at llano Street, 5th Street and Calle Lorca, which are operating at LOS E
- No calculated 95th percentile queue lengths on St. Michael's Drive at any study intersection appear to encroach into adjacent intersections or railroad tracks.
- The corridor currently operates at an Arterial LOS C for the AM peak, LOS D and E in the Midday, LOS C and D during the PM.

Road Diet Conditions

Existing traffic demands were also analyzed under road diet conditions. The summary results of the intersection capacity analysis include the following:

- All intersections are expected to operate at a level of service (LOS) D or better for AM, Mid-Day and PM peak hours.
- All individual movements are expected to operate at a LOS of E or better for AM, Mid-Day and PM peak hours under road diet conditions
- With the reduction in through lanes on St. Michael's Drive, 95th percentile queue lengths are increase across all approaches due to the reduction in capacity, none of which appear to encroach on any adjacent intersection or rail crossing.
- If a road diet is applied to the corridor, the existing Arterial LOS reduces to LOS F for many directions and peak periods. It should be noted that this assumes that existing traffic demands do not divert to new routes after through lanes are reduced.

Alternatives Analysis

Alternative 3A Pedestrian Hybrid Beacon (PHB)

- Based on the latest available data, a PHB is warranted at this location per the 2009 MUTCD.
- Per the 2009 MUTCD, a PHB is not precluded from being located adjacent to an at-grade rail crossing. The following considerations and recommendations should be given if a PHB is constructed:
    - Per most recent FHWA guidance (See letter in **Appendix D**), even though a PHB is considered to be a warning device and not a traffic control device, rail pre-emption should be used if the PHB is located within 200 feet of the rail crossing.
    - If a train pre-emption call is made without a pedestrian button call, the train crossing would operate as it does today and the PHB would remain dark vehicle indications and a solid pedestrian "Don't Walk" indication throughout the train event.
    - If a pedestrian call is made just prior to a rail pre-emption call is made is made during the flashing yellow and solid yellow phase of the PHB, the pedestrian call would be cancelled and the PHB would go dark during the duration of the rail crossing event.
    - If the train pre-emption call is made once the solid red and flashing red phases of the PHB is active, the pedestrian, the pedestrian crossing phases of the PHB would be completed as normal with "Walk" and flashing "Don't Walk" phases allowed to finish their normal cycle and then go dark.
    - If a pedestrian call is made during a train crossing event, it is recommended that the pedestrian should not get a "Walk" indication until at least a cycle after the train crossing indications have darkened and the crossing gates have risen to allow for vehicle queue dissipation.
    - Due to the presence of existing rail crossing signal, gates and mast arms, the placement of the PHB is crucial for effective visibility. Placement of signal poles and indications are provided within this report.

- Installation of a PHB at the study crossing is not expected to significantly impact signal operations within the St. Michael's corridor.

Pros:

- Per the attached letter from FHWA (Federal Highway Administration) dated July 21, 2010 in **Appendix D**, it recognizes that the MUTCD does not restrict the usage of a PHB within 200 feet of a railroad crossing and that the operation of flashing light signals (rail signals) at an at-grade crossing simultaneously with yellow indications of an adjacent PHB is not a violation of the MUTCD. However it does recommend that pre-emption be used if such an installation is pursued.
- A PHB facilitates a safer pedestrian and bicyclist crossing at a currently uncontrolled midblock crossing on a higher speed (40 mph) major arterial.
- A PHB will operate only during a pedestrian/bicycle call. Additionally, vehicles during the flashing red phase can proceed if there are no pedestrian/bicycles in the crosswalk.

Cons:

- Only a few PHB facilities have been installed in the state of New Mexico. Therefore, the general driving public may not be familiar with how a PHB is intended to operate.
- Similar style signal indications between the PHB and railroad signals (flashing Wig-Wag style red beacons) could generate confusion among vehicular traffic. The vehicular traffic will have to interpret two different flashing signal displays and operations. Technically, the flashing red signals have the same meaning to the driver, stop and, if clear, proceed. For the rail flashing signal, vehicular traffic signal operations is complicated by the dissension of the rail gate, which is a SHALL stop and remain stopped condition. There is a potential drivers not to be able to distinguish the PHB vs rail indications and also where to look to assess if the path is clear to proceed. . This can be mitigated separating the device servicing in time, by not servicing pedestrian calls immediately after train preemption has been activated.
- Westbound vehicular traffic may have to stop for a follow-up pedestrian after proceeding through the crossing during the PHB flashing red phase and then if a rail preemption starts at the same time leading to the potential for a vehicle caught on the tracks as rail gates are dropping. Said another way, for the WB approach the PHB and the rail operations are close enough to require a combination stop line east of the tracks. This stop line is nearly 100 ft from the pedestrian crossing. It is unreasonable for the driver to stop at the stop line and assess if the pedestrian crossing is clear from 100 ft away. With the stop and proceed if clear condition of a PHB, a wrong decision at the stop line could require the vehicle to stop again at the pedestrian crossing and potentially on the tracks.
- Current guidance researched on the PHB does not provide the flexibility to hold WB in a solid red condition, thus removing the "proceed if clear" condition and reducing the confusion on the WB approach. Further investigation and discussions with FHWA could be warranted.

- It should be noted that in a letter dated February 15, 2015, the Federal Railroad Administration expresses its opposition to the installation of PHB at rail signal due to the potential for confusion as discusses in the above second bullet point. A copy of that letter is provided in **Appendix D**.

The planning level cost of the PHB alternative would be **224,436.00 USD** per the previous study.

Alternative 3B Full Pedestrian Signal

- Based on the latest available pedestrian and traffic data, a full signal is not currently warranted under Warrant 5 (Pedestrian Warrant) nor the Warrant 9 (Intersection near a Grade Crossing) per the 2009 MUTCD.
- The following design considerations should be considered for safe operation with railroad crossing operations if a full pedestrian signal is constructed:
    - A full pedestrian signal should be operate with pre-emption. Calculated pre-emption time was estimated at 30 to 35 seconds.
    - When a rail pre-emption occurs, St. Michael's Drive will immediately go to yellow and all red phasing, railroad crossing wigwags will activate and gates will drop. Preferably, during pre-emption a pedestrian phase would not be allowed unless the call was made prior to pre-emption.
    - If a pedestrian call has been made just prior to a pre-emption call, the pedestrian phase may complete as normal with full "Walk" and flashing "Don't Walk" phasing. However, once the pedestrian phase returns to a solid "Don't Walk", the vehicular indication will remain a solid red until the rail wig wags cease and the crossing gates raise, at which point the vehicular indications will return to green.
    - Placement of the mast arms and poles for both eastbound and westbound would be similar to the PHB installation.
- Installation of a full pedestrian signal at the study crossing is not expected to significantly impact signal operations within the St. Michael's corridor.

Pros:

- The full signal facilitates a safer pedestrian and bicyclist crossing at a currently uncontrolled midblock crossing on a higher speed (40 mph) major arterial.
- The operation of a full signal is essentially the same operation that drivers experience at typical signalize intersections and therefore will immediately be familiar with the operation with no need for an educational campaign.
- With the application of railroad preemption, there is a much less likely chance of confusion between the pedestrian signal and rail signals as there will be no potential for conflicting signal indications.

- With consistent signal messages between rail and pedestrian signals, the safety issue described in the PHB discussion in which a vehicle is potential caught within the rail crossing envelope is much less likely with a full pedestrian signal.

Cons:

- Currently, a full signal is not warranted per 2009 MUTCD signal Warrant #4 Pedestrian Warrant.
- There can be some additional delay added to the vehicular approaches on St. Michael's when compared to "only when requested" operations of a PHB.

Estimated installation costs would be similar to PHB construction costs.

Alternative 6 Pedestrian Underpass

- Proposed improvements would involve construction of a trail undercrossing of St. Michael's Drive, approach trails to the undercrossing, and access trails north and south of St. Michael's connecting to the sidewalks along St. Michael's. The intent of the undercrossing is to improve safety by separating trail users and motor vehicles, and decrease travel delays for trail users who now have to wait to cross St. Michael's Drive at the current at-grade crossing.
- For the purposes of determining the feasibility of the undercrossing alternative, a cast-in-place reinforced concrete box culvert (CBC) structure type was evaluated. Other structure types including prefabricated structures may be feasible for this application and should be considered in the structure selection study during preliminary design. Design details and cross-sections are provided herein pages 32-43.
- No drainage appurtenances will be required within the underpass structure as storm water entering the north end will be able to flow completely through to the south end.
- Reconstruction of the 24-inch culvert pipe that currently crosses St. Michael's from north to south on the west side of the tracks will most likely need to be reconstructed.
- The undercrossing construction would affect traffic on St. Michael's Drive during construction of the CBC, and would affect pedestrian and bicycle traffic during construction of the CBC and the approach trails. Preliminary construction phasing is provided on page 44.
- Potential utility impacts were estimated and identified within this report on page 45.
- The proposed improvements would stay within the existing railroad right-of-way limits south of St. Michael's. Temporary construction easements may be required on property to the west of the rail corridor but temporary shoring should minimize or eliminate the area impacted.
- An environmental clearance and certification will be required for the proposed project. The level of effort is anticipated to be a categorical exclusion (CE) with either the NMDOT or City of Santa Fe as the lead agency.
- A pre-construction nest survey is recommended in order to comply with the Migratory Bird Treaty Act if construction occurs within the breeding season from April through September.

- The cultural desktop review identified that six cultural resource surveys have been conducted in the immediate vicinity of the proposed project between 1994 and 2014. Four of these surveys encompassed or overlapped the project area. The only historic property recorded in the project area during the course of these surveys was the rail line for the former Atchison Topeka and Santa Fe Railroad (now the BNSF Railway).

Estimated planning level costs would total **$2,750,000** for the construction of this alternative.

Introduction

On November 2014, a Road Safety Audit was conducted for the uncontrolled multi-use trail pedestrian/bicycle crossing of St. Michael's Drive at the Santa Fe Rail Road Crossing located approximately 550 feet west of the Calle Lorca signalized intersection. The NMDOT asked Lee Engineering to conduct further study focusing on traffic analysis for the corridor of St. Michael's Drive (NM 466) for NMDOT-Traffic Technical Support Bureau. The purpose of this analysis was to provide detailed traffic analysis, detailed operations explanation of potential traffic control devices, and rail operations for the potential traffic control alternatives and a preliminary investigation of design considerations for a future multi-use trail underpass.

The following detailed traffic analyses includes the following:

- Background discussion of previous study conclusions and recommendations
- Field Observation of the study area
- Traffic Data Collection (From City of Santa Fe MPO)
- Capacity Analyses for existing conditions and for the potential traffic control alternatives
- Capacity Analyses for Road Diet
- Discussion of potential design alternatives including:
    - Alternative 3A – Pedestrian Hybrid Beacon
    - Alternative 3B – Pedestrian Signal
    - Alternative 6 – Pedestrian Tunnel

Study Area and Existing Conditions

Figure 1 identifies the study area of the project. The study area is located on the corridor of St. Michael's Drive (NM 466) in Santa Fe County within the City of Santa Fe, New Mexico. The study area includes two signalized intersections to both the east and west of New Mexico Rail Runner (NMRX)/Santa Fe Rail Trail (SFRT) crossing. The intersections that are included in the study area are:

- Llano Street
- 5th Street
- SFRT
- Calle Lorca and
- S. Pacheco Street

St. Michael's Drive is a commercial corridor at the center of Santa Fe's urban residential area. In general, the surrounding area is commercial retail. St. Michael's Drive is currently classified as a Principal Arterial road incorporating three 12-foot through lanes in each direction, a 24-foot raised median, and 6-foot sidewalks on both sides of the roadway separated by a buffer without landscaping and raised curb and gutter. From back-of-sidewalk to back-of-sidewalk, the distance across St. Michael's Drive is about 130

feet. On the west side of the railroad tracks, a pedestrian refuge is provided for users of the Rail Trail through the median. Curb ramps with detectable warning surfaces are provided for pedestrian crossings. The corridor is currently signed for a 40 mph speed limit within the study area.

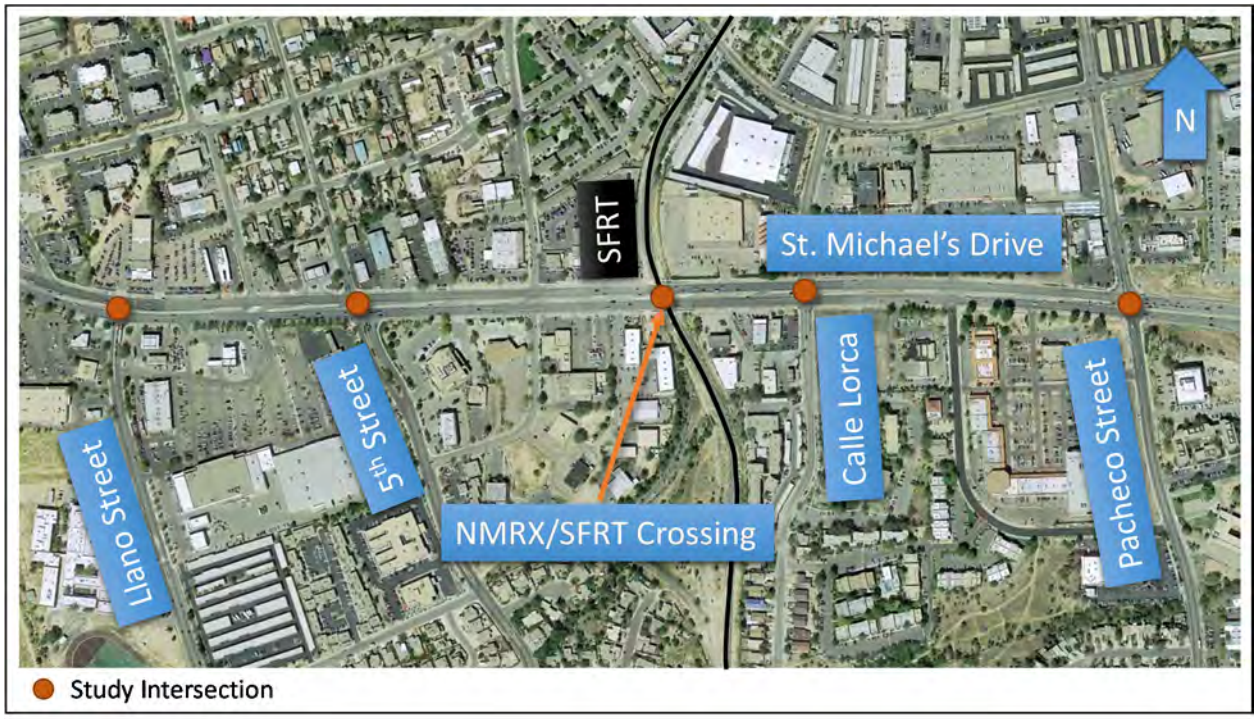

Figure 1. Vicinity Map

The City of Santa Fe is currently conducting a traffic study to assess the feasibility of a road diet, or reconfiguring St. Michael's Drive in this area to provide just two driving lanes in each direction and in part to provide bike lanes on the street.

The Santa Fe Rail Trail (SFRT) is a 10 to 12-foot wide multi-use trail that runs parallel to the New Mexico Rail Runner track starting at Alta Vista Street, 1 mile to the north, and terminating at Rabbit Road approximately 2.5 miles to the south where it turns into and unpaved trail. The trail crossing of St. Michaels Drive is currently unsignalized and is located immediately west of the existing railroad crossing. In the study area, the Rail Trail generally runs parallel to and on the west side of the railroad, with a distance of approximately 34 to 50 feet between the edge of trail and center of track south of St. Michael's, and a distance of about 15 feet separating the two on the north side of St. Michael's. As shown in **Figure 2**, north of St. Michael's where the trail gets within about 15 feet of the railroad centerline, a post-and-cable barrier has been erected to separate the two.

Also north of St. Michael's, a one-way (southbound) dirt service road runs parallel to the trail on its west side. The service road is west of the existing railroad right-of-way and the trail is within the railroad right-of-way. The trail and the dirt service road are separated by railroad tie edging. The service road extends approximately 800 feet north of St. Michael's and ends at a driveway to a commercial property west of the old west railroad right-of-way line. The main access to the commercial property, consisting of two one-way drives, is from 2nd Street. The dirt service road appears to be used as an alternative southbound one-way exit from and overflow parking for the commercial property. Refer to the Right-of-Way section for information related to the old and new railroad right-of-way.

Figure 2. Rail Trail North of St. Michael's Drive, Looking

Figure 3 shows the existing typical cross sections of the Rail Trail.

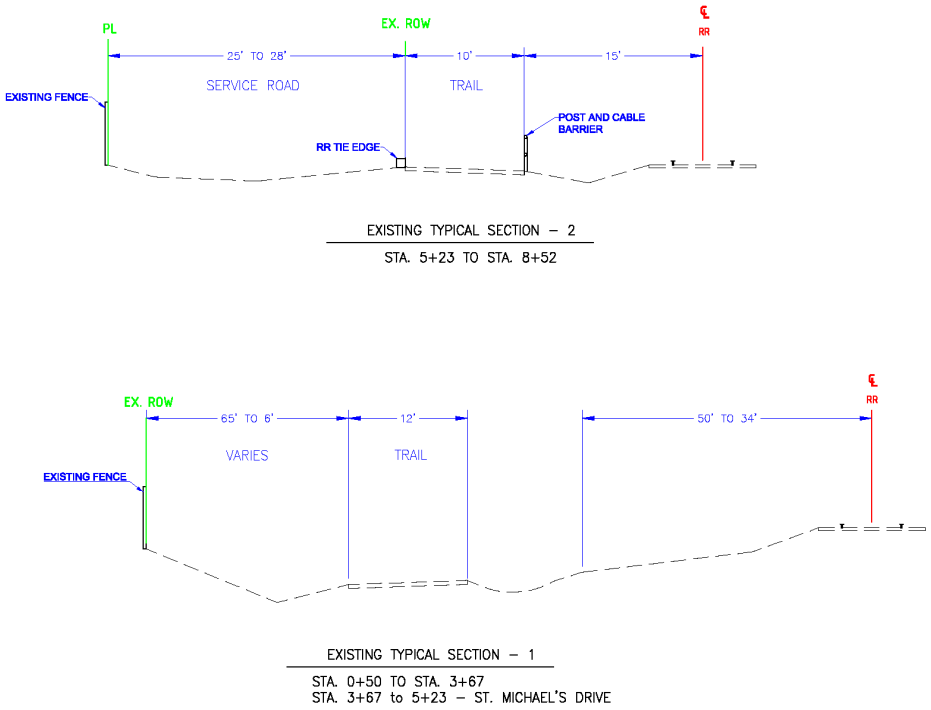

Figure 3. Existing Trail Cross-Section (Parametrix)

The railroad is owned by the NMDOT and managed by the Rio Metro Regional Transit District. Herzog Railroad Services, Inc. currently holds the contract for operations and maintenance of the rail line. From information obtained from the USDOT, the primary operating railroad on the track is the New Mexico Rail Runner Express (NMRX), which runs 20 trains a day (10 in each direction) across St. Michael's Drive. The Santa Fe Southern Railway (SFS), which is a seasonal tourist excursion train, also runs a round-trip to the community of Lamy on the track. The typical speed of a train across St. Michael's Drive is 20 to 25 mph. The NMRX/SFRT crossing of St. Michael's Drive is currently controlled by quad gates (four gates eastbound and four gates westbound), wig-wag signal mast arms for both directions, and wig-wag signal indications at all gate locations. The crossing is currently a quiet-zone, which means that a traversing train will not sound the horn as it passes. As part of quiet zone upgrades completed by NMRX, the multi-use trail crossing was moved from within the railroad crossing gates to just west of the westbound downstream crossing gates. The pedestrian crossing consists of pedestrian ramps on the north and south end of the crossing, a pedestrian median refuge, and bicycle crossing signs for both directions of travel on St Michael's Drive. Crosswalk striping is currently not in place at the pedestrian crossing.

Planned Area Construction

Generally, the area is fully developed with St. Michael's frontage properties occupied by commercial land use and thus there is not much opportunity for new development aside from redevelopment of existing land uses. An ongoing study / project has proposed a road diet on St. Michael's reducing three through lanes in each direction to two with the additional available width apportioned to bicycle lanes and/or a breakdown lane.

Drainage

South of St. Michael's Drive (**Figure 4**), the asphalt Rail Trail drains to the south at a slope of 4 to 5% and into the Arroyo de Los Pinos. The trail generally slopes from east to west. There is a shallow swale along the west side of the trail that drains to the arroyo. Approximately 140 feet south of St. Michael's there is an inlet on the east side of the trail that collects runoff from the north. A 24-inch culvert pipe connects to the inlet and extends southwest under the trail, discharging into the west side swale.

Figure 4. Existing Rail Trail South of St. Michael's Drive, Looking North from the Arroyo de los Pinos

North of St. Michael's Drive, the rail trail slopes to the east and into a ditch running parallel to the railroad. A 24-inch culvert pipe receives the ditch flows at a location approximately 70 feet north of St. Michael's. Based on field observation and as-built plans (NMDOT Project No. SP-OF-0466(200), CN 2053), this culvert pipe appears to extend south across St. Michael's to a manhole situated along the east side of the rail trail, approximately 50 feet south of St. Michael's. This manhole may be connected to the inlet further

south along the east side of the trail which ultimately discharges to the culvert crossing the trail to the west as described above The exact configuration of this system was not evident in the field and as-built plans were incomplete, so field survey will be needed to determine the actual configuration.

Storm water flows in St. Michael's drain from east to west in the area of the railroad crossing. The westbound lanes of St. Michael's east of the railroad flow into a grate and curb inlet in the median. The configuration of the remainder of the drainage system in the project area is estimated as follows. The St. Michael's median inlet has a pipe to the north and a pipe to the east. The pipe to the north extends to an exposed 24-inch corrugated metal pipe culvert end approximately 110 feet north of St. Michael's, in the ditch on the east side of the railroad tracks. The pipe to the east is an 18-inch corrugated metal slotted pipe that drains toward the inlet. This inlet connects to the transverse inlet grate in the outside eastbound lane. The transverse inlet grate that extends north from the outside curb across half of the outside eastbound lane, approximately 45 feet east of the tracks, has a pipe extending to the west. This pipe connects to the 24-inch corrugated metal pipe extending from the north side of St. Michael's. Based on the above-referenced NMDOT project as-builts, this system drains toward the south on the east side of the tracks. Refer to the existing utility layout map on **Figures 5a and 5b** for the estimated layout of the storm drain system.

Utilities

The presence and horizontal location of existing utilities was estimated with a Level D (records research) SUE survey. The records research included information from one-call, utility as-builts, construction drawings, conduit maps, anecdotal data from utility owners, the City of Santa Fe's online GIS, and a field visit. A summary of the utilities present in the study area is provided below and shown in **Figures 5a and 5b**.

- A buried City of Santa Fe sanitary sewer line runs parallel to St. Michael's Drive behind the sidewalk of the westbound lanes. A sanitary sewer manhole is located immediately west of the service road and north of the sidewalk.
- Conduit and wiring for the City's street lighting and traffic signal interconnect runs underneath the sidewalks on both sides of St. Michael's Drive at the proposed undercrossing location.
- A City of Santa Fe water line runs parallel to St. Michael's Drive underneath the eastbound sidewalk.
- The New Mexico Gas Company has an 8-inch steel high-pressure gas line running parallel to St. Michael's Drive near the south right-of-way line.
- Two CenturyLink communications cables are buried parallel to St. Michael's Drive underneath the eastbound sidewalk. There is also a Century Link communication cable buried parallel to the railroad along its west side.
- Verizon has a fiber optic line running along the west side of the railroad, from 30 inches to 15 feet from the tracks. Verizon fiber optic lines also cross St. Michael's Drive.

SUE LEGEND

Quality Level C/D	Utility:
T1.1(D)	TELEPHONE – Century Link
G1.1(D)	GAS – New Mexico Gas
W1.1(D)	WATER – City of Santa Fe
E1.1(D)	ELECTRIC – PNM
SL1.1(D)	STREET LIGHT – City of Santa Fe
OE1.1(D)	FIBER OPTIC – MCI/Verizon
SS1.1(D)	SANITARY SEWER – City of Santa Fe
SD1.1(D)	STORM DRAIN – City of Santa Fe
E1.1(D)	TRAFFIC – City of Santa Fe
UNK1.1(D)	UNKNOWN – Unknown Owner

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

1 inch = 50 ft.

Parametrix
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ST. MICHAEL'S DRIVE
RAIL–TRAIL UNDERPASS

EXISTING UTILITY AND STORM DRAIN MAP

FIGURE 5a

SUE LEGEND

Quality Level C/D	Utility:
T1.1(D)	TELEPHONE – Century Link
G1.1(D)	GAS – New Mexico Gas
W1.1(D)	WATER – City of Santa Fe
E1.1(D)	ELECTRIC – PNM
SL1.1(D)	STREET LIGHT – City of Santa Fe
OE1.1(D)	FIBER OPTIC – MCI/Verizon
SS1.1(D)	SANITARY SEWER – City of Santa Fe
SD1.1(D)	STORM DRAIN – City of Santa Fe
E1.1(D)	TRAFFIC – City of Santa Fe
UNK1.1(D)	UNKNOWN – Unknown Owner

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50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

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ST. MICHAEL'S DRIVE
RAIL–TRAIL UNDERPASS

EXISTING UTILITY AND STORM DRAIN MAP

FIGURE 5b

- PNM has pad-mounted switchgear at both the southwest and southeast quadrants of the railroad crossing at St. Michael's. Both are located behind the sidewalk; the switchgear at the southwest quadrant is located behind a fence for an adjacent property. These two switchgear boxes are connected by underground electric conductors.

- Owned by NMDOT and associated with the Rail Runner is a large controller bungalow located at the southwest quadrant of the crossing between the Rail Trail and the railroad (**Figure 6**).

Figure 6. Railroad Controller Bungalow

Right-of-Way

Existing right-of-way limits were estimated using the following right-of-way maps and information from the Santa Fe County Assessor's website:

- St. Michael's Drive – NMDOT project number U-001-5(6)
- Railroad – NMDOT project number AC-GRIP-025-4(132)266, PCN G2BT3

St. Michael's Drive lies within a 150' NMDOT right-of-way. South of St. Michael's Drive the railroad right-of-way is 100 feet wide. According to information from the Assessor's website, the irregularly-shaped parcel adjacent to the west side of the railroad right-of-way (**Figure 7**) is privately owned.

Figure 7. Parcel West of Railroad Corridor

North of St. Michael's the new railroad right-of-way (as of 2010) varies slightly in width and is approximately 75 feet wide. The western portion, approximately 25 feet, of the old 100-foot wide railroad right-of-way is identified as a service road on the PCN G2BT3 right-of-way maps. Identifying the ownership of this service road will require additional research as it is not identified on the maps or on the Assessor's website.

Previous Study

A Road Safety Audit was commissioned by the NMDOT for this study area and completed October of 2014. The purpose of that RSA was to evaluate traffic safety and operations, identify issues and recommend improvements to the NMRX/SFRT crossing of St. Michael's Drive. The RSA concluded that there were some operational issues, but there were no safety issues. The study proposed five design alternatives for investigation.

Alternative 1, which suggested median refuse modifications and has already been completed by NMDOT as a part of Quite Zone Improvements for the NMRX.

Alternative 2, suggested SFRT trail detour routes which will direct pedestrian/bicyclists from the current crossing to either the signalized intersection at St. Michael's Drive/Calle Lorca and/or 5th Street. This would require widening the sidewalk, installing train gates across the trail and fencing the median.

Alternative3, suggested installing a Pedestrian Hybrid Beacon (PHB) type signal to assist pedestrian cross St. Michael's Drive SFRT.

Alternative 4, suggests median refuge modifications with signal flashers including installation of NMDOT –Type II mast arms with flashing yellow beacons in advance of SFRT crossing with W11-1 and W11-2 or W11-15 signs on mast arms. It also includes the installation of signs at the crossing ramps and two video detection camera mounted on a NMDOT –Type V pole next to the median refuse within the median.

Alternative 5, suggest to construct an elevated bridge structure over St. Michael's Drive.

Alternative 6, suggests to construct a tunnel under St. Michael's Drive.

Among these proposed alternatives, Alternatives 3 and 6 were chosen for further evaluation with an addition of a full pedestrian signal as alternative 3B.

Existing Vehicular and Pedestrian Traffic Demands

In order to analyze potential design alternatives, current vehicular and pedestrian historical demand data was assembled from the previous study completed by the City of Santa Fe and the Santa Fe Metropolitan Planning Organization (SFMPO).

To identify potential traffic volume growth for the St. Michael's Corridor, historical daily traffic volumes were obtained from the SFMPO for 2006-2014. There were no data available for the year of 2009, 2010 and 2013. The historical data provided is summarized in ***Table 1***. As indicated, traffic volumes on St. Michael's have declined significantly since 2008 mainly due to a coinciding recession. Only since 2014 have traffic demands started growing again and thus have not yet reached the levels observed in 2006. Therefore, per City of Santa Fe recommendation, 2006 traffic volume data will be used for this study without applying any growth rate, as these demands will be conservative compared to today's anticipated demands.

Table 1. Historical Daily Traffic Volumes

St. Michael's Drive	Volume (AADT)	Growth Rate (Yearly)
2006	27,300	-
2007	38,800	42%
2008	39,000	0.5%
2011	25,472	-35%
2012	21,320	-16%
2014	23,020	8%

2006 traffic demands, as provided by the City of Santa Fe, and existing traffic control and geometry for all study intersections are provided in **Figure 8**. Detailed raw count data and pedestrian count data are provided in **Appendix A**.

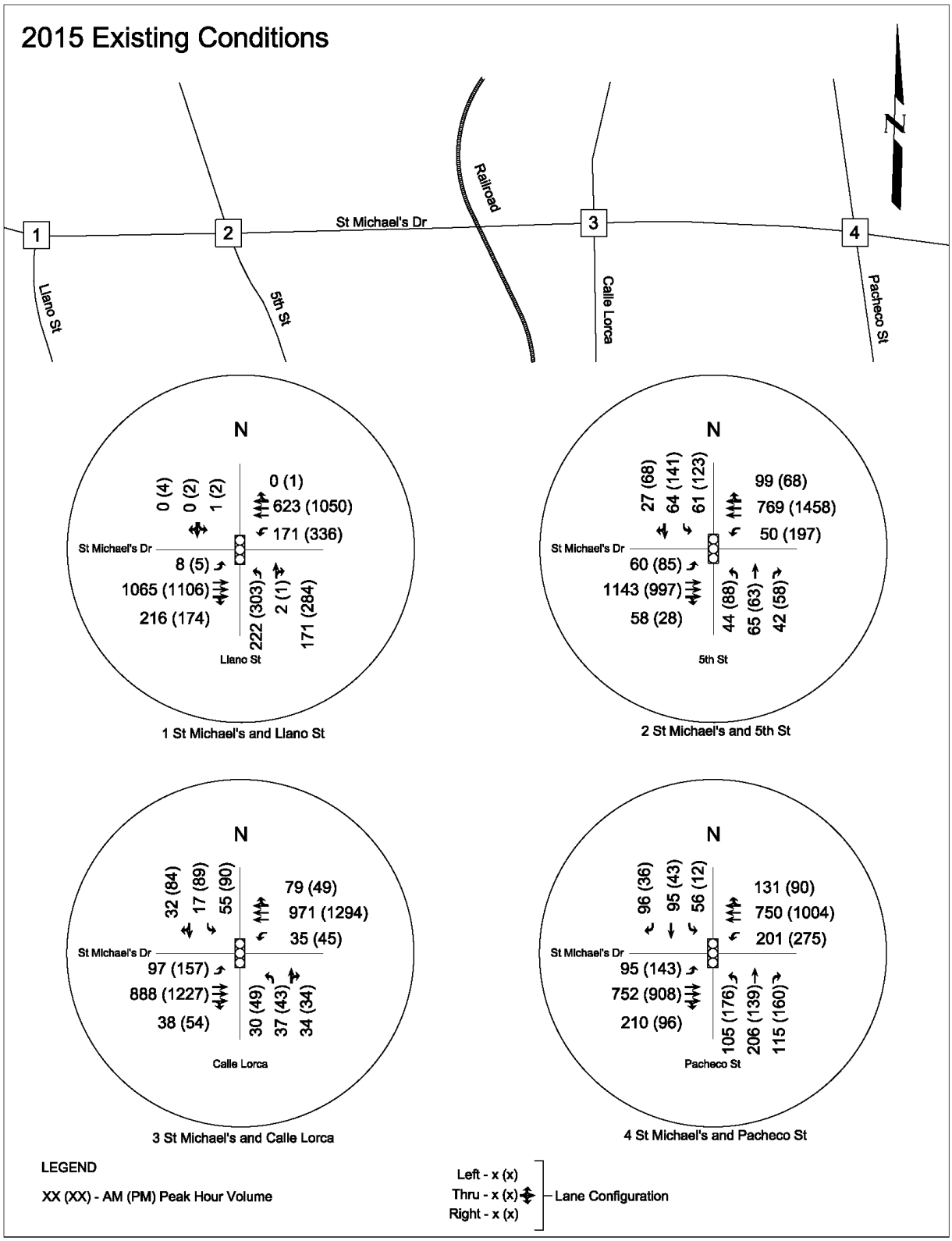

2015 Existing Conditions
N
St Michael's Dr
Railroad
Llano St
5th St
Calle Lorca
Pacheco St
1
2
3
4
0 (4)
0 (2)
1 (2)
0 (1)
623 (1050)
171 (336)
8 (5)
1065 (1106)
216 (174)
222 (303)
2 (1)
171 (284)
1 St Michael's and Llano St
27 (68)
64 (141)
61 (123)
99 (68)
769 (1458)
50 (197)
60 (85)
1143 (997)
58 (28)
44 (88)
65 (63)
42 (58)
2 St Michael's and 5th St
32 (84)
17 (89)
55 (90)
79 (49)
971 (1294)
35 (45)
97 (157)
888 (1227)
38 (54)
30 (49)
37 (43)
34 (34)
3 St Michael's and Calle Lorca
96 (36)
95 (43)
56 (12)
131 (90)
750 (1004)
201 (275)
95 (143)
752 (908)
210 (96)
105 (176)
206 (139)
115 (160)
4 St Michael's and Pacheco St
LEGEND
XX (XX) - AM (PM) Peak Hour Volume
Left - x (x)
Thru - x (x)
Right - x (x)
Lane Configuration

Figure 8. Existing Traffic Counts and Geometry

Pedestrian demands at the SFRT mid-block crossing were counted as part of the November 2014 RSA, with peak demands occurring 8:00 – 9:00 AM, 12:30-1:30 PM and 5:00-6:00. **Figure 9.** indicates peak demands at the SFRT crossing by direction.

As the SRFT is partially used a recreational facility, a case could be made that volumes would increase in the late spring, summer, and early fall.

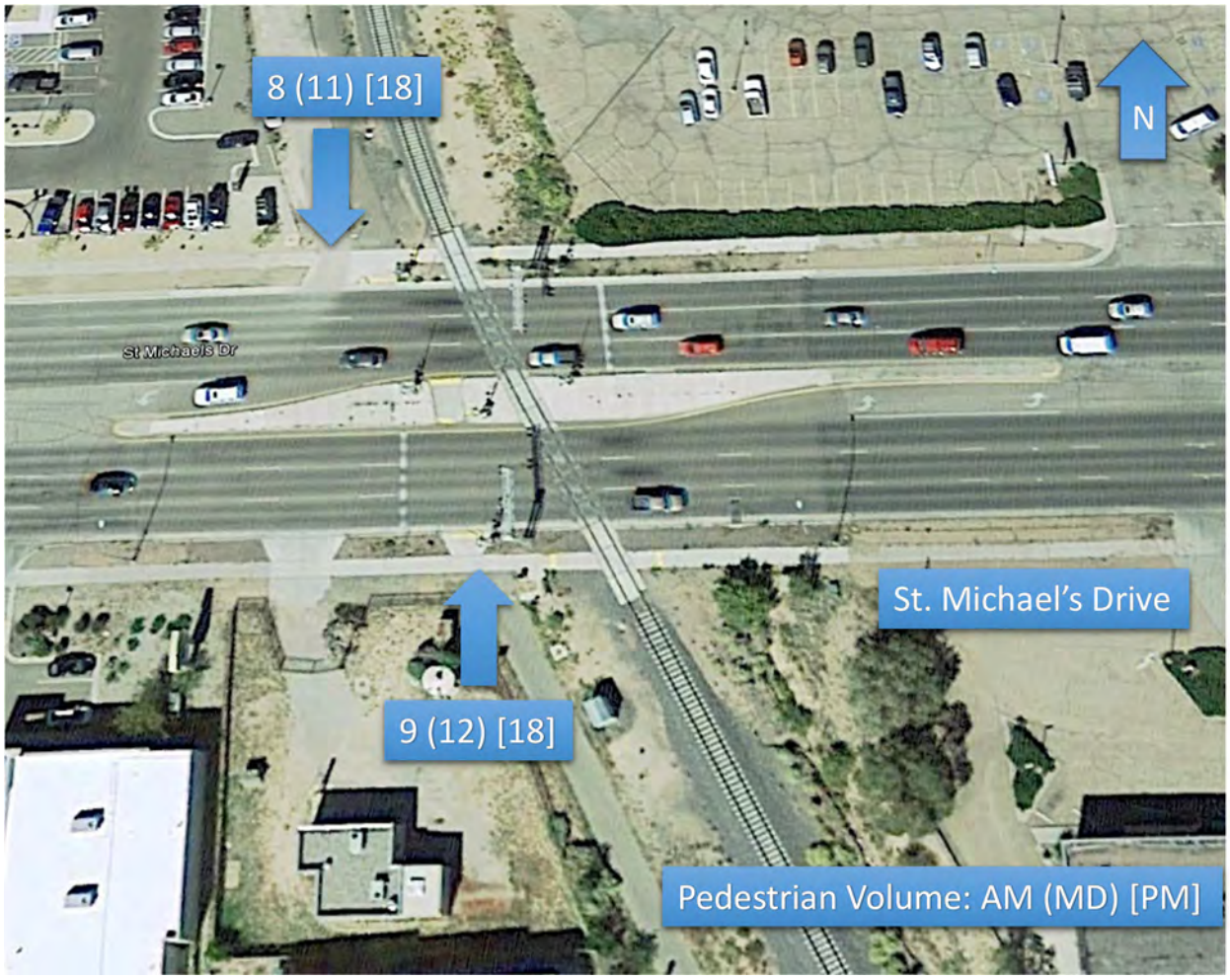


Figure 9. Pedestrian Crossing Volume

Corridor Capacity Analysis

The construction of either a PHB or full pedestrian signal has the potential to impact the operations of adjacent signals on the St. Michael's corridor. Therefore, to assess current and projected intersection performance for signalized and unsignalized intersections, levels of service (LOS) is typically reported. The analysis of signalized intersections is based on the approach control delay, which includes initial deceleration delay, start-up lost time, stopped delay, and final acceleration delay for all movements. The capacity criteria for signalized intersections analysis are presented in ***Table 2***.

Table 2. Level of Service Criteria for Signalized/Unsignalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)
LOS	Signalized
A	**≤10.0**
B	**>10.0 and ≤20.0**
C	**>20.0 and ≤35.0**
D	**>35.0 and ≤55.0**
E	**>55.0 and ≤80.0**
F	**>80.0**

Source: *Highway Capacity Manual, HCM 2010*

Analyses of the study area intersections were analyzed based on the methodologies presented in the Highway Capacity Manual 2010 and evaluated using the Synchro software package (version 9). Both AM and PM peak hour conditions for the 2006 existing volumes, as shown in Figure 2, were used as input values. Signal timing and controller information was provided by the City of Santa Fe. Resulting Synchro output calculation sheets are contained in **Appendix B**.

Existing 2014 Conditions

Using Synchro 9.0, capacity and 95th percentile queue analyses were performed for the study intersections. In general, existing signal timing was applied. However, green times were optimized and analyzed for Llano Street and St. Michael's Drive for Mid-Day and PM Peak hour conditions as some movements under existing green splits were failing. Analysis results are summarized in **Table 3**.

Table 3. Level of Service Summary, Existing Conditions

Intersection / Movement	AM Peak			MidDay			PM Peak		
	LOS	Delay (s)	95th Percentile Queue	LOS	Delay (s)	95th Percentile Queue	LOS	Delay (s)	95th Percentile Queue
Int 1.Llano Street and St. Michael's Drive (Signalized)									
Overall Intersection	C	20.8		C	23.6		C	26.6	
Total EB Approach	B	14.2	12	C	25.7	16	C	34.7	13
Total WB Approach	A	7.9	54	A	6.6	314	A	9.5	237
Total NB Approach	E	57.9	275	E	62.8	315	D	49.2	353
Total SB Approach	E	61.1	-	C	28	-	C	29.5	-
Int 2. 5th Street and St. Michael's Drive (Signalized)									
Overall Intersection	A	9.3		B	17.2		B	15.2	
Total EB Approach	A	0.6	16	B	17.5	6	A	1.2	88
Total WB Approach	A	5.7	27	A	10	111	B	13.9	86
Total NB Approach	E	55.6	79	D	43.8	111	D	49.0	167
Total SB Approach	E	57.3	100	D	43.9	141	D	47.8	163
Int 3. Calle Lorca and St. Michael's Drive (Signalized)									
Overall Intersection	A	7.8		B	10.2		B	18.8	
Total EB Approach	A	5.7	25	B	11.2	161	A	9.7	56
Total WB Approach	A	0.4	87	A	1	12	B	18.6	33
Total NB Approach	E	55.9	59	D	42.4	77	D	52.3	87
Total SB Approach	E	57.8	94	D	42.5	93	D	52.9	132
Int 4. S. Pacheco and St. Michael's Drive (Signalized)									
Overall Intersection	B	17.7		C	22.4		C	25.6	
Total EB Approach	A	1.3	44	A	6.3	257	C	26.3	87
Total WB Approach	B	11.8	116	C	20.2	234	B	11.3	150
Total NB Approach	D	53.3	117	D	44.8	184	E	59.1	206
Total SB Approach	D	52.3	70	D	44.4	126	E	57.1	25

Based on the above summary, the following conclusions and observations can be made:

- Generally, all study intersections are operating at LOC C or better for all peak hour periods under existing timing plans.
- The majority of study intersection approaches are operating at LOS D or better except for the following approaches, which are operating at LOS E
    - Northbound and southbound approaches at Llano Street for the AM and Mid-Day peak time.
    - Northbound and southbound approaches at 5th Street during the AM peak.
    - Northbound and southbound approaches at Pacheco during the PM peak period.
- Generally, the greatest 95th percentile queue demands are occurring on the side street especially on the northbound approach to the Llano Street intersection.

- No calculated 95th percentile queue lengths on St. Michael's Drive appear to encroach into adjacent intersections.

Road Diet Scenario

As mentioned previously, there have been plans to reduce St. Michaels Drive from a six-lane section to a four-lane section. Therefore, existing traffic demands were analyzed under road diet conditions as well. The summary results of the intersection capacity analysis under road diet conditions, are shown in ***Table 4***. Again, some intersection green splits were optimized if there were observed movements with LOS E or worse.

Table 4. Level of Service Summary, Road Diet Conditions

	AM Peak			MidDay			PM Peak		
	LOS	Delay (s)	Queue	LOS	Delay (s)	Queue	LOS	Delay (s)	Queue
Int 1.Llano Street and St. Michael's Drive (Signalized)									
Overall Intersection	C	22.4		D	45.6		D	40.7	
Total EB Approach	B	18.9	12	E	74.7	14	D	54.7	11
Total WB Approach	A	5.4	140	B	17.2	301	B	17.4	456
Total NB Approach	E	57.9	275	D	42	325	E	65.2	378
Total SB Approach	E	61.1	-	C	28.7	-	C	32.3	-
Int 2. 5th Street and St. Michael's Drive (Signalized)									
Overall Intersection	A	9.8		C	33.1		B	18.3	
Total EB Approach	A	1.0	27	D	44.6	5	A	1.7	64
Total WB Approach	A	6.5	27	C	22.2	150	B	19.5	86
Total NB Approach	E	55.6	79	D	39.1	105	D	49.0	167
Total SB Approach	E	57.3	100	D	39.9	137	D	47.8	163
Int 3. Calle Lorca and St. Michael's Drive (Signalized)									
Overall Intersection	A	8.4		C	31.9		C	27.7	
Total EB Approach	A	6.7	25	C	31.5	241	B	13.7	74
Total WB Approach	A	0.9	8	C	31	18	D	35.1	19
Total NB Approach	E	55.9	59	D	36.2	66	D	52.3	87
Total SB Approach	E	57.8	94	D	37.3	88	D	52.9	132
Int 4. S. Pacheco and St. Michael's Drive (Signalized)									
Overall Intersection	B	18.8		C	27.8		C	29	
Total EB Approach	A	2.3	44	B	10.6	249	C	31.1	52
Total WB Approach	B	13.6	116	C	29.5	329	B	14.9	178
Total NB Approach	D	53.3	117	D	44.8	184	E	59.1	206
Total SB Approach	D	52.3	70	D	44.4	126	E	57.1	25

The following findings are made based on the corridor capacity analysis:

- Under road diet conditions all the intersections are expected to operate at a level of service (LOS) D or better for AM, Mid-Day and PM peak hours.
- All individual movements are expected to operate at a LOS of E or better for AM, Mid-Day and PM peak hours under road diet conditions
- With the reduction in through lanes on St. Michael's Drive, 95th percentile queue lengths are increase across all approaches due to the reduction in capacity.

Arterial LOS

In order to assess the potential impacts on St. Michael's Drive corridor operations, Arterial Levels of Service were reviewed. Arterial Level of Service assigns a LOS A through F to a corridor based on flow speeds, travel times, and stop delay. Table 9 shows the Arterial LOS summary for St. Michael's Drive for existing and road diet conditions.

Table 5. Arterial Level of Service Summary

Corridor Scenario	Direction	AM Peak		MidDay		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
St. Michael's Dr.	EB	39.8	C	73	D	122.1	E
	WB	30.4	C	46.7	D	94	E
St. Michael's Dr. For Road Diet	EB	86.5	E	270	F	142.2	F
	WB	69	D	233.3	F	99	E

As indicated, the corridor currently operates at LOS C for the AM peak and westbound PM peak. However, the corridor operates at LOS D and E in the Midday and LOS D during the PM for the eastbound direction. For Road Diet conditions, St. Michael's Drive is failing with a LOS of F for Mid-Day and PM peak for eastbound and for westbound it is failing for the Mid-Day peak. Existing Arterial LOS reduces to LOS F for many directions and peak periods if a road diet is applied to the corridor. It should be noted that this assumes that existing traffic demands do not divert to new routes after through lanes are reduced.

Pedestrian Crossing Alternative Designs

As mentioned, the original RSA conducted in November of last year narrowed six design alternatives down to three to be further investigated. Those alternatives included:

Alternative 3A Pedestrian Hybrid Beacon (PHB)

Alternative 3B Full Pedestrian Signal

Alternative 6 Pedestrian Tunnel

The following section will further investigate these potential alternatives detailing required improvements, potential drainage, utility, environmental, and rail and vehicular operations impacts, planning level costs, and conclusions for each design alternative.

Alternative 3A Pedestrian Hybrid Beacon

As mentioned in the original RSA, a previous study was conducted by City of Santa Fe Traffic Engineering Division in the 2011. One of the findings of that study was that a PHB did satisfy the 2009 PHB Warrant and was recommended as a potential mitigation for the crossing, an excerpt of which is provided in **Appendix C**. The recent RSA updated pedestrian counts at the crossing with a slight increase in the number of pedestrian crossings. A PHB warrant was reinvestigated for this study using updated RSA pedestrian demands, and it is concluded that the PHB warrant of 25 minimum pedestrians crossing during a peak hour is still satisfied. Warrant calculation sheets are provided in **Appendix C**. The original RSA proposed a PHB as a potential safety mitigation of the Santa Fe Rail Trail Crossing at St. Michael's Drive. **Figure 10** shows operation and typical sequence of phases for a Pedestrian Hybrid Beacon from both a pedestrian and vehicle perspective. The source of the graphic is from the City of Neenah, Wisconsin's public information campaign. As indicated, vehicular indications are only activated when a pedestrian button call is made:

1. At this time a flashing yellow beacon will activate indicating to drivers that they need to be prepared to stop. The duration of the flashing yellow phase is at the discretion of the engineer.
2. The flashing yellow beacon will then become a solid yellow operating similarly to a standard yellow indication on for a full signal where the driver should stop if able to safely stop at the indicated stop bar. Up to this point, the pedestrian indication has shown a solid "Don't Walk" restricting pedestrians from entering the crosswalk. Based on a 40 mph speed limit on St, Michael's Drive, the flashing yellow phase is calculated to be 4 seconds.
3. Upon the end of the solid yellow phase, a solid red will phase will come up indicating that vehicle must remain stopped while the pedestrian indication is now showing a "Walk" symbol allowing pedestrians to enter the crosswalk. Since the solid red occurs simultaneously with the "Walk" phase, the duration of this phase would be 7 seconds based on pedestrian demands greater than 10 in an hour.
4. The solid red will then change to a flashing red at the same time a flashing "Don't Walk" with count down pedestrian indication is on. The flashing red allows vehicles to proceed through the

crossing if no pedestrians are present in the crosswalk. Although the flashing red phase can vary slightly, it usually corresponds with the "Flashing Don't Walk" pedestrian phase. Based on an estimated crossing length of 100 feet and a pedestrian walk speed of 3.5 feet per second per MUTCD, this phase would be calculated at 25 seconds.

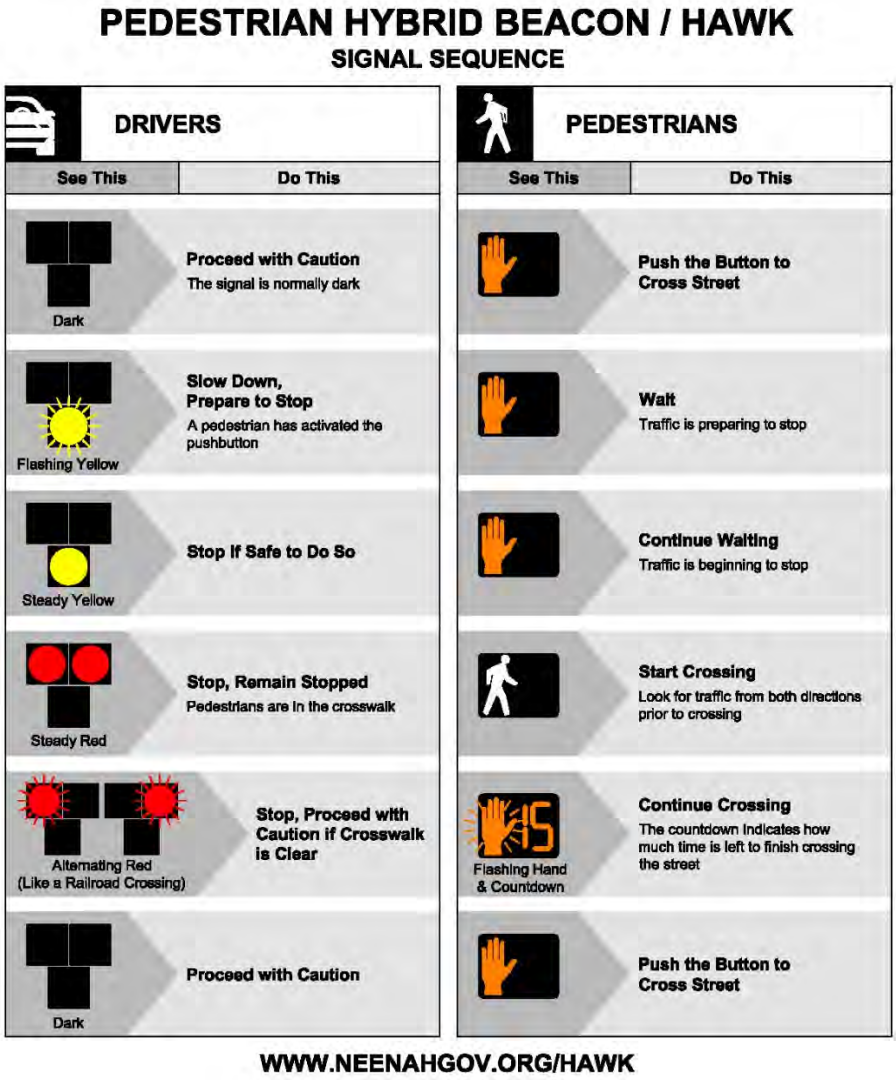


Figure 10. Pedestrian Hybrid Beacon Signal Sequence

Alternative 3a Rail Crossing Interaction

Per the 2009 MUTCD, a PHB is not precluded from being located adjacent to an at-grade rail crossing. However there should be considerations given to how both will operate in conjunction with another. The following considerations and recommendations should be given if a PHB is constructed:

- Per most recent FHWA guidance (See letter in **Appendix D**), even though a PHB is considered to be a warning device and not a traffic control device, rail pre-emption should be used if the PHB is located within 200 feet of the rail crossing, which is the case for the SFRT crossing of St. Michael's Drive. Unlike a full signal, pre-emption for the PHB would not include an activation of the PHB but would work as follows:
    - If a train pre-emption call is made without a pedestrian button call, the train crossing would operate as it does today and the PHB would show darkened vehicle indications and a solid pedestrian "Don't Walk" indication throughout the train event. **Figure 11** depicts the sequence of this scenario.
    - If a pedestrian call is made just prior to a rail pre-emption call is made is made during the flashing yellow and solid yellow phase of the PHB, the pedestrian call would be cancelled and the PHB would go dark during the duration of the rail crossing event with the same operation as depicted in **Figure 11**. This would be acceptable based on the fact that the pedestrian "Walk" and/or flashing "Don't Walk" phase has not started. The reason for this would be to avoid having the flashing red indications of the railroad crossing active at the same time a yellow or flashing yellow is active on the PHB, which could cause some confusion for drivers.
    - If the train pre-emption call is made once the solid red and flashing red phases of the PHB is active, the pedestrian, the pedestrian crossing phases of the PHB would be completed as normal with "Walk" and flashing "Don't Walk" phases allowed to finish their normal cycle and then go dark. Since both railroad and PHB indications will be red, there should be not be the same confusion of indications mentioned in the previous bullet. **Figure 12.** depicts the sequence of this scenario.

Figure 11 PHB Rail Pre-Emption Operation (No Pedestrian Call)

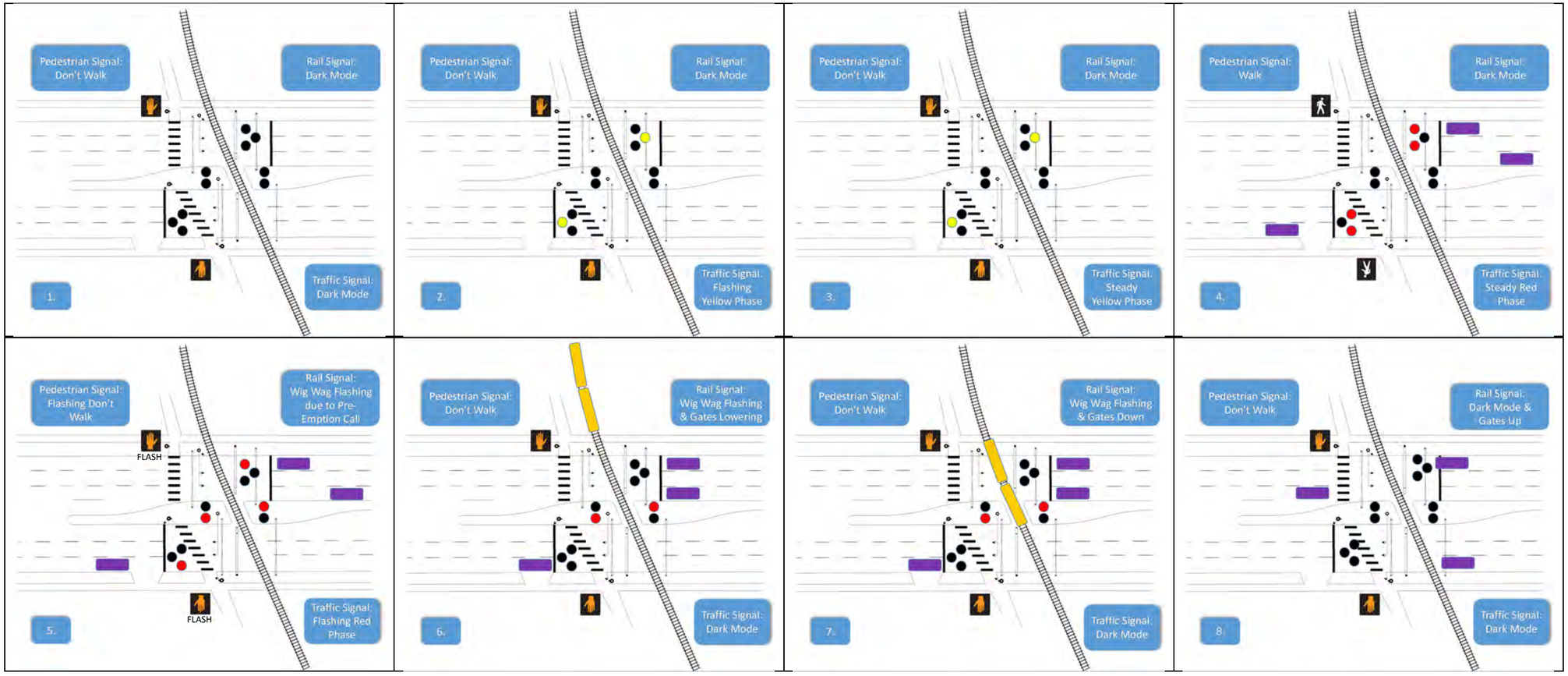


Figure 12 PHB Rail Pre-Emption Operation (with Pedestrian Call)

- If a pedestrian call is made during a train crossing event, it is recommended that the pedestrian should not get a "Walk" indication until at least a minute or two after the train crossing indications have darkened and the crossing gates have risen to allow for vehicle queue dissipation. The delay in servicing pedestrian call is also recommended from a safety perspective. If the PHB was activated after the flashing red rail beacons have stopped and the gates have risen, vehicles will have an instant reaction of starting to move and may not pay attention to the activated flashing yellow and solid yellow phases of the PHB thus potentially putting the pedestrians at risk. Providing a delay in responding to the pedestrian call will avoid this situation. Based on Poisson distribution, it was calculated that a maximum 130 second interval could be tolerated for westbound traffic before 95th percentile queue length begin to encroach into the adjacent Calle Lorca signal located 470 feet to the east of the rail crossing.
- Due to the presence of existing rail crossing signal, gates and mast arms, the placement of the PHB is crucial for effective visibility. The westbound PHB mast arm should be place 30 feet west of the existing westbound railroad mast arm and the eastbound should be placed 15 feet west of the eastbound railroad signal mast arm. Both mast arms should be placed a minimum of 45 feet from the proposed vehicular stop bar per 2009 MUTCD visibility requirements. Buttons should be provided within the median to allow pedestrians and bicycles who get stranded can fully traverse St. Michael's with a pedestrian phase. Please see Figures 13a through 13c for plan layout and a perspective view for westbound and eastbound respectively.

Figure 13a Pedestrian Hybrid Beacon or Pedestrian Signal Layout

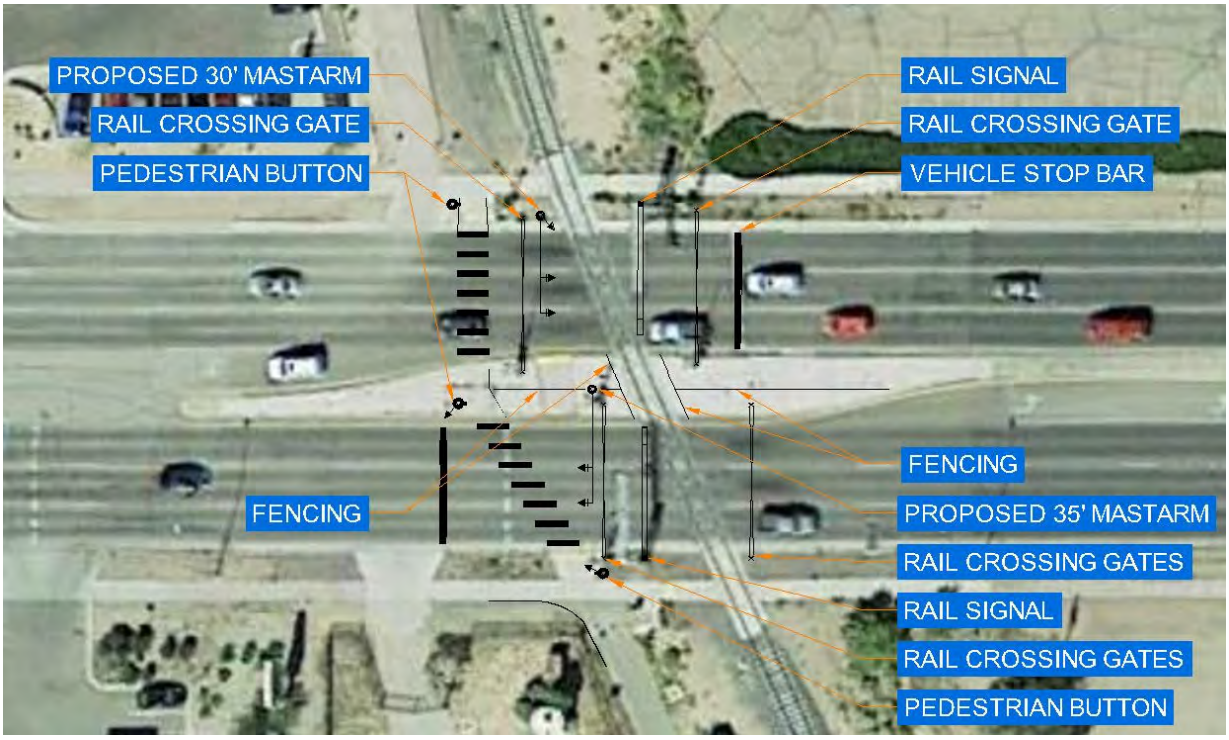


Figure 13b Pedestrian Hybrid Beacon or Pedestrian Signal EB Perspective View

Figure 13c Pedestrian Hybrid Beacon or Pedestrian Signal WB Perspective View

Alternative 3a St. Michael's Drive Operational Impacts

With the addition of a PHB to the St. Michael's Drive corridor, the potential added stop for a pedestrian activation will impact travel times, delay, and queuing. Therefore a Synchro Analysis with the added beacon was conducted. As indicated in Table 6, the arterial LOS decreases for the St. Michaels Corridor on both eastbound and westbound directions, but not significantly.

Table 6. Arterial Level of Service Summary, PHB

Corridor Scenario	Direction	AM Peak		MidDay		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
St. Michael's Dr.	EB	40.2	C	55.8	D	122.1	E
	WB	30.8	C	53.8	D	94	E
SFRT	NB	0.5	B	0.7	C	1	B
	SB	0.5	B	0.7	C	1	B

Delay and queue calculations were also conducted. Delay was calculated using Synchro and assuming pedestrian calls arriving randomly with the PHB not coordinated and no railroad calls. Additionally, estimated 95th percentile queue lengths were calculated for both eastbound and westbound directions using a Poisson model and wait time long enough to clear a pedestrian (32 s). Both delay and queuing are indicated in Tables 7 and Table 8. As shown, delays on both eastbound and westbound are modest and are equivalent to an LOS of A. The 95th percentile queues appear to be accommodated by available storage. Most crucially, it appears that the 95th percentile queue does not encroach into the east adjacent signal at Calle Lorca. As will be shown in the analysis for the full signal, the PHB could be coordinated with the other signals using the existing cycle lengths and appropriate offset. However, pedestrians waiting for the walk phase would have to wait up to 2 minutes depending on where in the cycle the button activation is made.

Table 7. Capacity Analysis Summary, PHB

Intersection / Movement	AM Peak			MidDay			PM Peak		
	LOS	Delay (s)	Queue	LOS	Delay (s)	Queue	LOS	Delay (s)	Queue
Int 1. St. Michael's Drive and SFRT, With PHB									
Total EB Approach	B	0.9	45	A	1.4	85	A	1.2	69
Total WB Approach	A	0.9	45	A	1.4	87	A	1.2	71

Table 8. Queue Analysis Summary, PHB

Intersection / Movement	AM Peak			MidDay			PM Peak		
	Queue Poison Method	Delay (s)	95th Percentile Queue	Queue Poison Method	Delay (s)	95th Percentile Queue	Queue Poison Method	Delay (s)	95th Percentile Queue
Int 1.SFRT and St. Michael's Drive, With PHB									
Total EB Approach	131	0.9	45	-	1.4	85	174	1.2	69
Total WB Approach	132	0.9	45	-	1.4	87	173	1.2	71

Pros:

- Per the attached letter from FHWA (Federal Highway Administration) dated July 21, 2010 in **Appendix D**, it recognizes that the MUTCD does not restrict the usage of a PHB within 200 feet of a railroad crossing and that the operation of flashing light signals (rail signals) at an at-grade crossing simultaneously with yellow indications of an adjacent PHB is not a violation of the MUTCD. However it does recommend that pre-emption be used if such an installation is pursued.
- A PHB facilitates a safer pedestrian and bicyclist crossing at a currently uncontrolled midblock crossing on a higher speed (40 mph) major arterial.
- Unlike a full pedestrian signal, a PHB will operate only during a pedestrian/bicycle call. Additionally, vehicles during the flashing red phase can proceed if there are no pedestrian/bicycles in the crosswalk. Both of these operational characteristics, will slightly reduce queue demands and delay for vehicles.

Cons:

- The number of PHB facilities has been very few in the state of New Mexico. Therefore, the general driving public may not be familiar with how a PHB is intended to operate. It is likely necessary that an educational campaign would be necessary to inform drivers of the appropriate operation of a PHB.
- Similar style signal indications between a PHB and Rail Signals (flashing Wig-Wag style red beacons) could generate confusion among vehicular traffic. The vehicular traffic will have to interpret two different flashing signal displays and operations. Technically, the flashing red signals have the same meaning to the driver, stop and, if clear, proceed. For the rail flashing signal, vehicular traffic signal operations is complicated by the dissension of the rail gate, which is a SHALL stop and remain stopped condition. There is a potential drivers not to be able to distinguish the PHB vs rail indications and also where to look to assess if the path is clear to proceed. . This can be mitigated separating the device servicing in time, by not servicing pedestrian calls immediately after train preemption has been activated
- Westbound vehicular traffic may have to stop for a follow-up pedestrian after proceeding through the crossing during the PHB flashing red phase and then if a rail preemption starts at the same time leading to the potential for a vehicle caught on the tracks as rail gates are dropping. Said another way, for the WB approach the PHB and the rail operations are close enough to require a combination stop line east of the tracks. This stop line is nearly 100 ft from the pedestrian crossing. It is unreasonable for the driver to stop at the stop line and assess if the pedestrian crossing is clear from 100 ft away. With the stop and proceed if clear condition of a PHB, a wrong decision at the stop line could require the vehicle to stop again at the pedestrian crossing and potentially on the tracks.
    - Current guidance researched on the PHB does not provide the flexibility to hold WB in a solid red condition, thus removing the “proceed if clear” condition and reducing the

confusion on the WB approach. Further investigation and discussions with FHWA could be warranted.

- It should be noted that in a letter dated February 15, 2015, the Federal Railroad Administration expresses its opposition to the installation of PHB at rail signal due to the potential for confusion as discusses in the above second bullet point. A copy of that letter is provided in **Appendix D**.

The planning level cost of the PHB alternative would be **224,436.00 USD** per the previous study.

Alternative 3B Pedestrian Signal

The previously referenced 2011 study of the St. Michael's SFRT crossing conducted by City of Santa Fe Traffic Engineering Division also provided a full pedestrian signal analysis by reviewing MUTCD Warrant #4, which is the pedestrian warrant. This study found that MUTCD signal warrant #4 was not met due to lower than required pedestrian volumes per MUTCD chapter 4. A gap study was also conducted and the gaps were found to be lower than standard but since the pedestrian volume warrant is not satisfied, it was concluded that a full pedestrian signal was not warranted.

For this study, the pedestrian warrant was reinvestigated and then applying the most recent pedestrian count data collected in the RSA. Based on this updated data, it is concluded that the pedestrian warrant is still not satisfied, as the required threshold needed is 93 pedestrians in the peak hour.

A full pedestrian signal would essentially operate like a traditional signal controlled intersection, except there would be no vehicular phasing for north-south movements. Phasing would be limited to a north-south pedestrian "Walk", flashing don't walk, and solid don't walk phases, and an east-west vehicular red, yellow and green. Like the PHB, the pedestrian phase would be activated by a pushbutton. However, unlike the PHB there is a constant green on the vehicular approaches when there is no pedestrian call. When the pedestrian call is made:

1. The vehicular approaches will indicate a solid yellow of 4 seconds based on a 40 mph speed limit.
2. Then the red phase will start 1 second prior to the beginning of the pedestrian phase to provide intersection clearance.
3. The pedestrian "Walk" phase (usually 7 seconds) will commence.
4. The flashing "Don't Walk" will activate after the "Walk" phase and will be long enough to clear a pedestrian just entering the traveled way on St. Michael's Drive completely across the vehicular lanes at 3.5 feet per second. Under the current geometry, this would be calculated at 25 seconds.
5. Once the flashing don't walk phase ends, the green phase will return to the vehicular approaches on St. Michael's Drive.

Alternative 3b Rail Crossing Interaction

Like the PHB alternative, close proximity to the existing at-grade railroad crossing requires planning to determine how both signals will operate in conjunction with each other without creating conflicting signal indications. The following design considerations should be considered for safe operation with railroad crossing operations if a full pedestrian signal is constructed:

- Similar to the PHB, a full pedestrian signal should be operate with pre-emption. Pre-emption calculations were calculated based on a best case (rail pre-emption occurs during pedestrian phase) and worst case (pre-emption occurs during vehicular green phase). Calculations are provided in **Appendix E** with resulting required pre-emption time at approximately 30 to 35 seconds.
- When a rail pre-emption occurs, St. Michael's Drive will immediately go to yellow and all red phasing, railroad crossing wigwags will activate and gates will drop. Preferably, during pre-

emption a pedestrian phase would not be allowed unless the call was made prior to pre-emption. **Figure 14** depicts the sequence of this scenario.

- If a pedestrian call has been made just prior to a pre-emption call, the pedestrian phase may complete as normal with full “Walk” and flashing “Don’t Walk” phasing. However, once the pedestrian phase returns to a solid “Don’t Walk”, the vehicular indication will remain a solid red until the rail wig wags cease and the crossing gates raise, at which point the vehicular indications will return to green. **Figure 15** depicts the sequence of this scenario.
- Similar to the PHB, location of the signal mast arms and poles will be crucial, as there are potential visual conflicts with existing railroad crossing indications. Placement of the mast arms and poles for both eastbound and westbound are depicted in **Figures 13a through 13c**.

Figure 14. Full Signal Rail Pre-Emption Operation (No Pedestrian Call)

Figure 15. Full Signal Rail Pre-Emption Operation (with Pedestrian Call)

Alternative 3b St. Michael's Drive Operational Impacts

Just like the PHB, the addition of a full pedestrian signal to the St. Michael's Drive corridor, will impact travel times, delay, and queuing. A Synchro Analysis with the added signal was conducted. As indicated in Table 9, the arterial LOS decreases and travel delays increase for the St. Michaels Corridor on both eastbound and westbound directions very similarly to the addition of a PHB with only slightly greater travel time increases than with the addition of a PHB.

Table 9. Arterial Level of Service Summary, Full Signal

Corridor Scneario	Direction	AM Peak		MidDay		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
St. Michael's Dr.	EB	39.8	C	73	D	122.1	E
	WB	30.2	C	46.7	D	94	E
SFRT	NB	3.1	B	3	C	1	B
	SB	1.5	C	1.3	C	1	B

Delay and queue calculations were also conducted. Delay was calculated using Synchro and assuming that the signal would be coordinated with existing signal network. Additionally, estimated 95th percentile queue lengths were calculated for both eastbound and westbound directions using a Poisson model and the network cycle length. Both delay and queuing are indicated in Tables 10 and 11.

Table 10. Capacity analysis Summary, Full Signal

Intersection / Movement	AM Peak			MidDay			PM Peak	
	LOS	Delay (s)	Queue	LOS	Delay (s)	Queue	LOS	Delay (s)
Int 1.SFRT and St. Michael's Drive, With Full Signal								
Total EB Approach	A	0.2	123	A	0.5	317	A	7.7
Total WB Approach	A	0.2	82	A	0.5	0	A	0.3

Table 11. Queue analysis Summary, Full Signal

Intersection / Movement	AM Peak			MidDay			PM Peak		
	Queue Poison Method	Delay (s)	95th Percentile Queue	Queue Poison Method	Delay (s)	95th Percentile Queue	Queue Poison Method	Delay (s)	95th Percentile Queue
Int 1.SFRT and St. Michael's Drive, With Full Signal									
Total EB Approach	391	0.9	123	-	1.4	317	532	1.2	12
Total WB Approach	395	0.9	82	-	1.4	0	528	1.2	34

As shown, delays on both eastbound and westbound are modest and are equivalent to an LOS of A. The 95th percentile queues appear to be accommodated by available storage. Most crucially, it appears that the 95th percentile queue does not encroach into the east adjacent signal at Calle Lorca. Due to coordination pedestrians waiting for the walk phase would have to wait up to 2 minutes depending on where in the cycle the button activation is made. It should be noted that if the signal is not coordinated, resulting delays and queue length demands would be similar to those shown in the PHB analysis.

Pros:

- Like the PHB, the full signal facilitates a safer pedestrian and bicyclist crossing at a currently uncontrolled midblock crossing on a higher speed (40 mph) major arterial.
- The operation of a full signal is essentially the same operation that drivers experience at typical signalize intersections and therefore will immediately be familiar with the operation with no need for an educational campaign.
- With the application of railroad preemption, there is a much less likely chance of confusion between the pedestrian signal and rail signals as there will be no potential for conflicting signal indications. With a rail pre-emption call, the signal will activate the vehicular yellow and red phases just prior the rail signals and gates activate to provide enough time for vehicles to clear the rail crossing prior to the gates coming down. The signal will remain red until the rail crossing flashers turn off and the gate raise to allow vehicles to continue on St. Michael's Drive.
- With consistent signal messages between rail and pedestrian signals, the safety issue described in the PHB discussion in which a vehicle is potential caught within the rail crossing envelope is much less likely with a full pedestrian signal.

Cons:

- Currently, a full signal is not warranted per 2009 MUTCD signal Warrant #4 Pedestrian Warrant.
- There can be some additional delay added to the vehicular approaches on St. Michael's when compared to "only when requested" operations of a PHB.

Estimated installation costs would be similar to PHB construction costs.

Alternative 6 Pedestrian Tunnel

Proposed improvements would involve construction of a trail undercrossing of St. Michael's Drive, approach trails to the undercrossing, and access trails north and south of St. Michael's connecting to the sidewalks along St. Michael's. The intent of the undercrossing is to improve safety by separating trail users and motor vehicles, and decrease travel delays for trail users who now have to wait to cross St. Michael's Drive at the current at-grade crossing.

Geometry

The conceptual design of the undercrossing used the following references:

- Guide for the Development of Bicycle Facilities, Fourth Edition, 2012 – AASHTO
- Public Right-of-Way Accessibility Guidelines – United States Access Board
- Rails-with-Trails: Lessons Learned, Literature Review, Current Practices, Conclusions, 2002 – FHWA

For the purposes of determining the feasibility of the undercrossing alternative, a cast-in-place reinforced concrete box culvert (CBC) structure type was evaluated. Other structure types including prefabricated structures may be feasible for this application and should be considered in the structure selection study during preliminary design. The proposed undercrossing structure would be approximately 150 feet in length. The CBC evaluated was a standard NMDOT design with inside dimensions of 14 feet wide and 9 feet high. The depth for the structure was estimated to be a minimum of two feet from the St. Michael's Drive pavement surface to the top of the CBC at the north end, and would be deeper at the south end due to the vertical grade of the structure. **Figure 16** shows a cross section of the proposed undercrossing. The lateral offset from the track centerline would be approximately 35 feet.

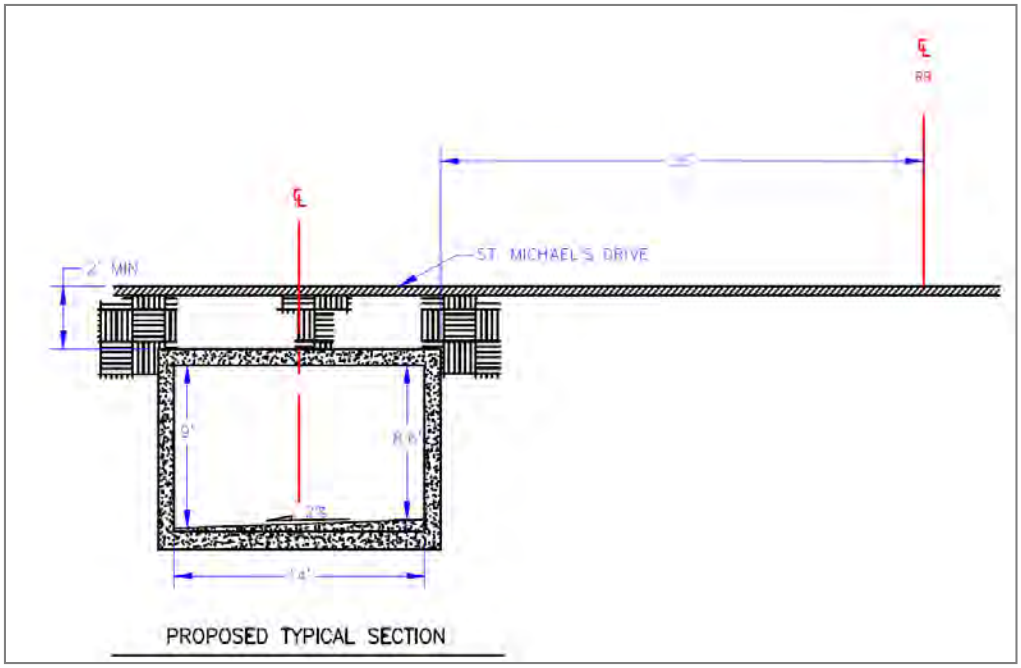


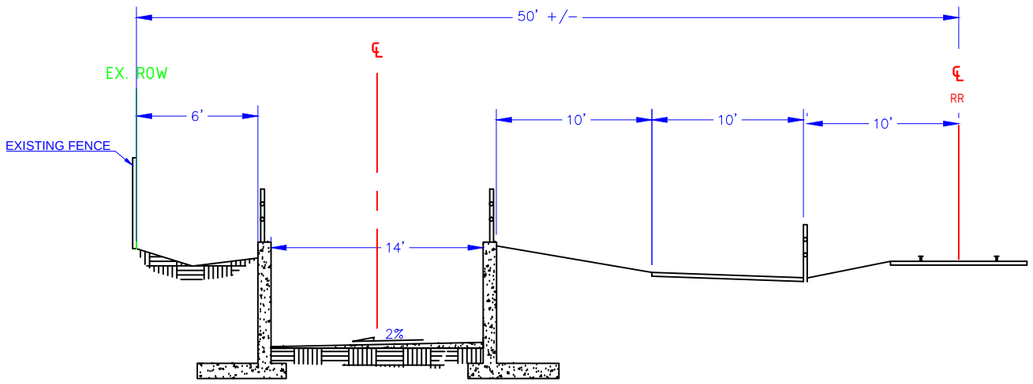
Figure 16. Cross Section of Trail Undercrossing

The new Mainline Rail Trail would stay on generally the same horizontal alignment as the trail today south of St. Michael's. North of St. Michael's the Mainline Trail would follow the alignment of the existing service road west of the existing trail, eliminating the use of that space as a service road. These two segments would connect underneath St. Michael's Drive via the CBC as discussed above. Approaches to the undercrossing would be approximately 325 feet south of the CBC and 350 feet to the north. The running slope of the mainline approaches would be a 1.0% upgrade to the CBC from the south, then a 1.5% upgrade through the CBC, and finally a 5.0% upgrade to the north end. The proposed typical sections for the Mainline Trail as it approaches the CBC are illustrated in **Figures 17a and 17b**. Conceptual plan and profile drawings for the proposed Mainline Trail underpass and approaches are shown in **Figures 18a and 18b**.

Approximately 350 feet south of St. Michael's Drive, the St. Michael's "Access Trail" would branch from the Mainline Rail Trail. The new Access Trail would serve to connect the Mainline Rail Trail to the St. Michael's Drive sidewalks, diverging from the original trail to the east to run between the railroad tracks and the Mainline Rail Trail alignment. The Access Trail would generally parallel the Rail Trail; however, in the area of the railroad controller bungalow, the Access Trail could be aligned between the railroad tracks and the bungalow if the bungalow were to remain in place. In this configuration, the lateral separation between the track centerline and trail edge would be approximately 10 feet, a distance considered to be the absolute minimum separation in constrained areas. The preferred alignment would maintain the Access Trail parallel to the Rail Trail mainline and relocate the controller bungalow. This would allow for a consistent lateral separation between the Access Trail and tracks south of St. Michael's, and would position the bungalow such that access by railroad maintenance personnel would not interfere with trail use.

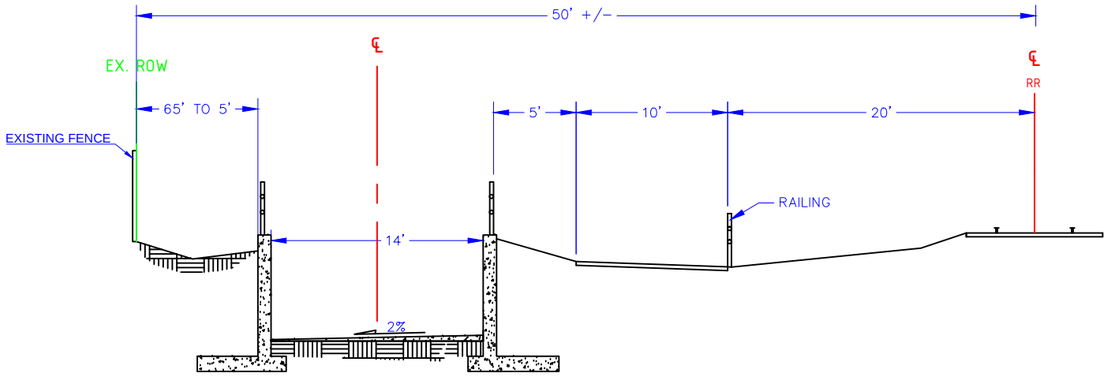
Both of the Access Trail alignment options are illustrated in the typical sections of **Figures 17a and 17b** and on the conceptual plan and profile drawings for the Access Trails of **Figures 19a and 19b**. Conceptual cross sections along the Mainline Rail Trail alignment are illustrated in **Figures 20a and 20b**.

North of St. Michael's the Access Trail would essentially follow the alignment of the existing trail at a lateral offset of approximately 15 feet from the track centerline. Approximately 370 feet north of St. Michael's the Mainline Rail Trail would merge into the Access Trail, with the trail continuing north on its existing alignment. Throughout the Mainline and Access Trail alignments, railing will be used as a physical separation between the undercrossing approaches of the Mainline Trail and the Access Trail and between the Access Trail and the railroad tracks.



PROPOSED TYPICAL SECTION – 2

STA. 2+54 TO STA. 3+67 (OPTION WITH BUNGALOW REMAINING)



PROPOSED TYPICAL SECTION – 1

STA. 0+50.76 TO STA. 2+54

STA. 2+54 TO STA. 3+67
(OPTION WITH BUNGALOW
RELOCATED)

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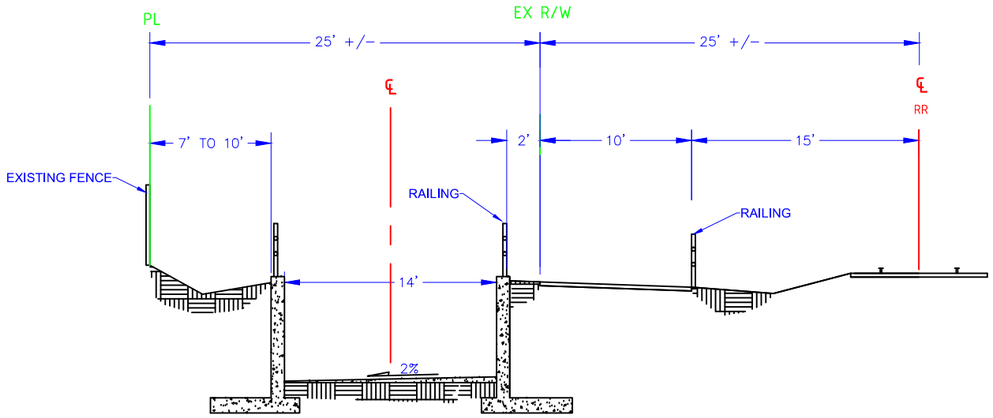
ST. MICHAEL'S DRIVE
RAIL–TRAIL UNDERPASS

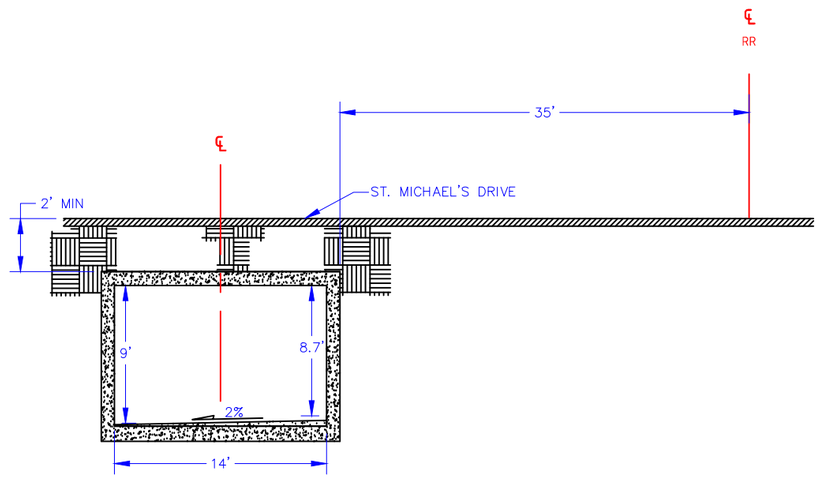
PROPOSED TYPICAL SECTIONS

Figure 17a



PROPOSED TYPICAL SECTION – 4

STA. 5+23 TO 8+52



PROPOSED TYPICAL SECTION – 3

STA. 3+67 TO 5+23

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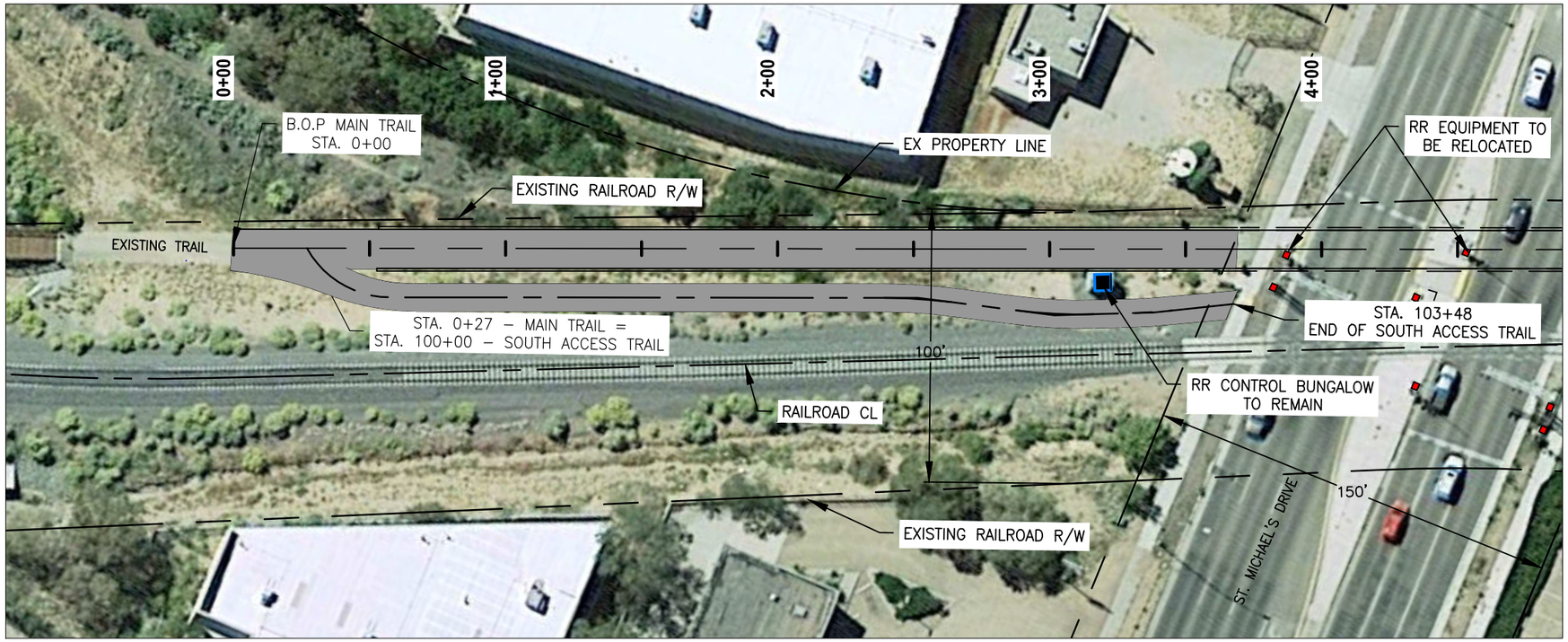
ST. MICHAEL'S DRIVE
RAIL–TRAIL UNDERPASS

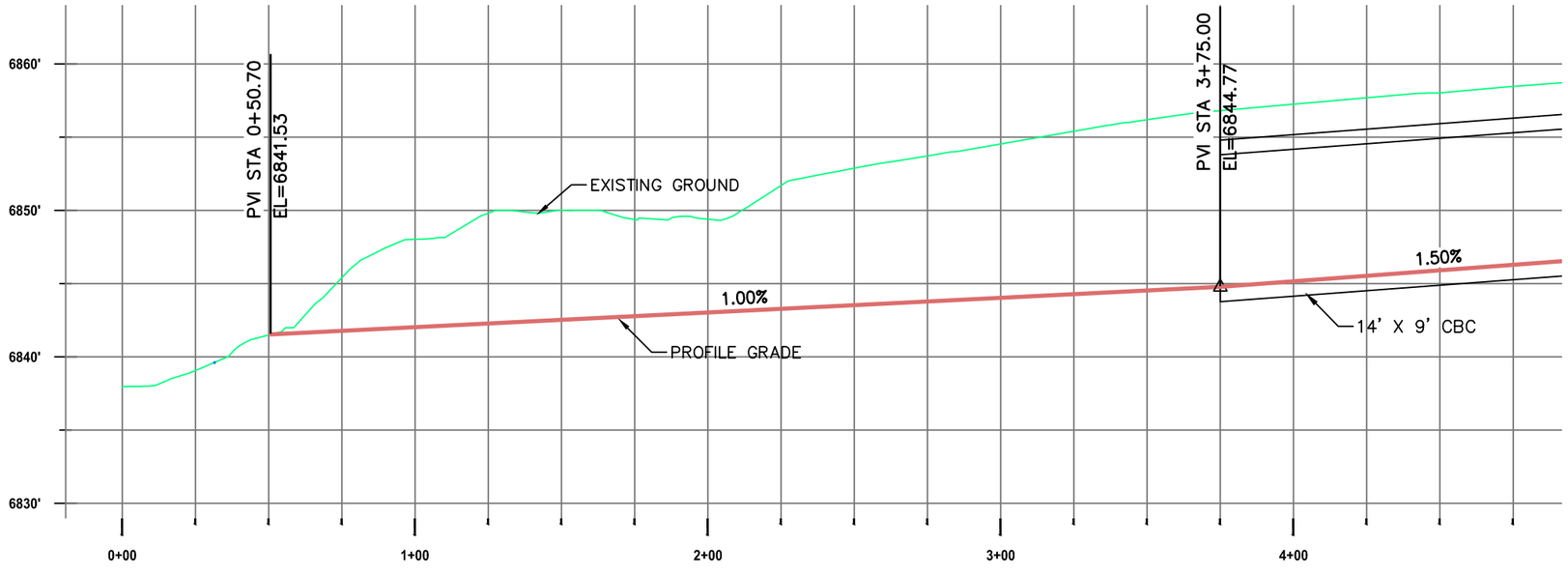
PROPOSED TYPICAL SECTIONS

Figure 17b



SCALE: 1"=50' HOR.

MAINLINE RAIL TRAIL



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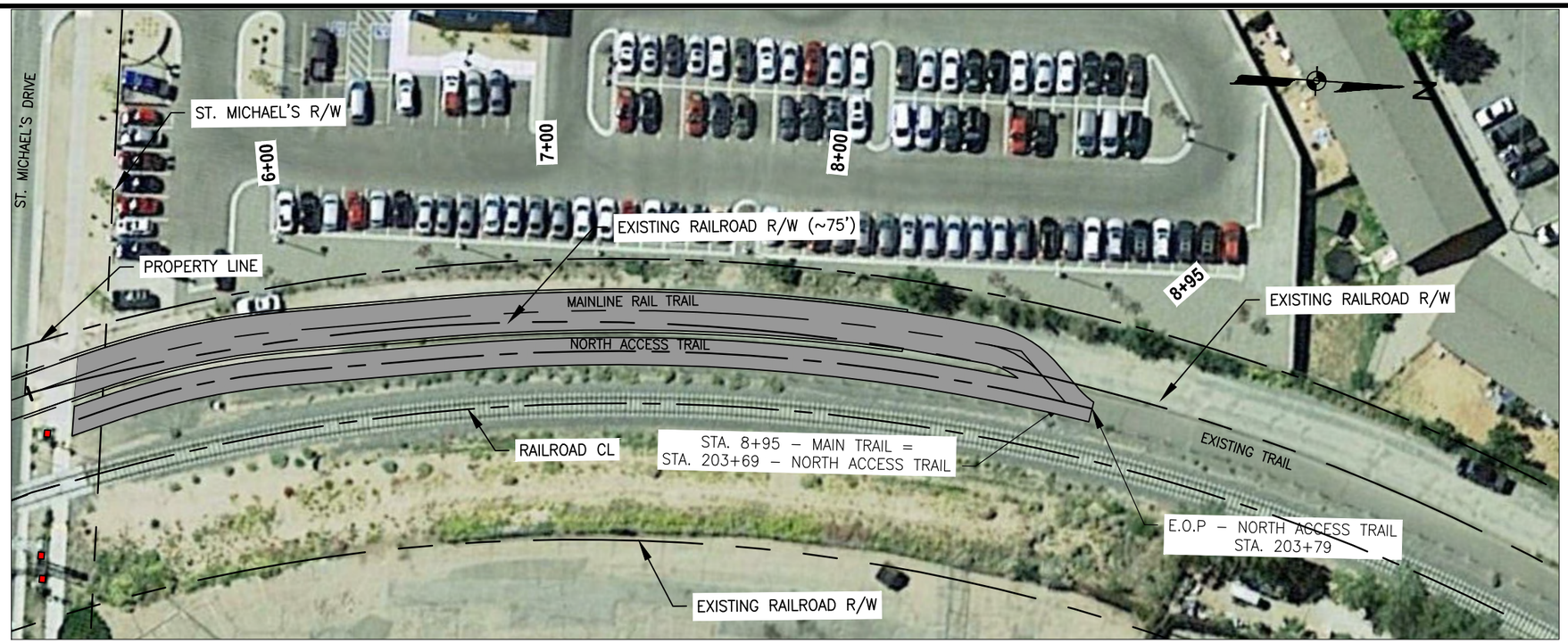
SANTA FE RAIL TRAIL
UNDERPASS AT ST.
MICHAEL'S DRIVE

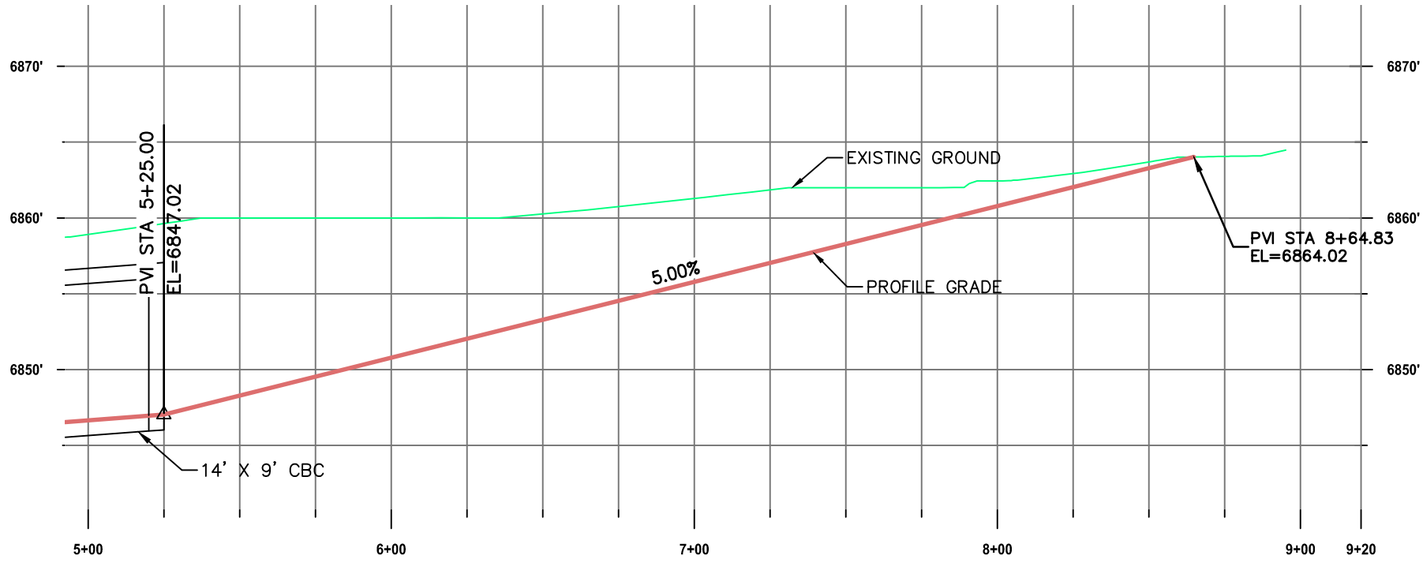
MAINLINE RAIL TRAIL PLAN AND PROFILE

Figure 18a



SCALE: 1"=50' HOR.

MAINLINE RAIL TRAIL



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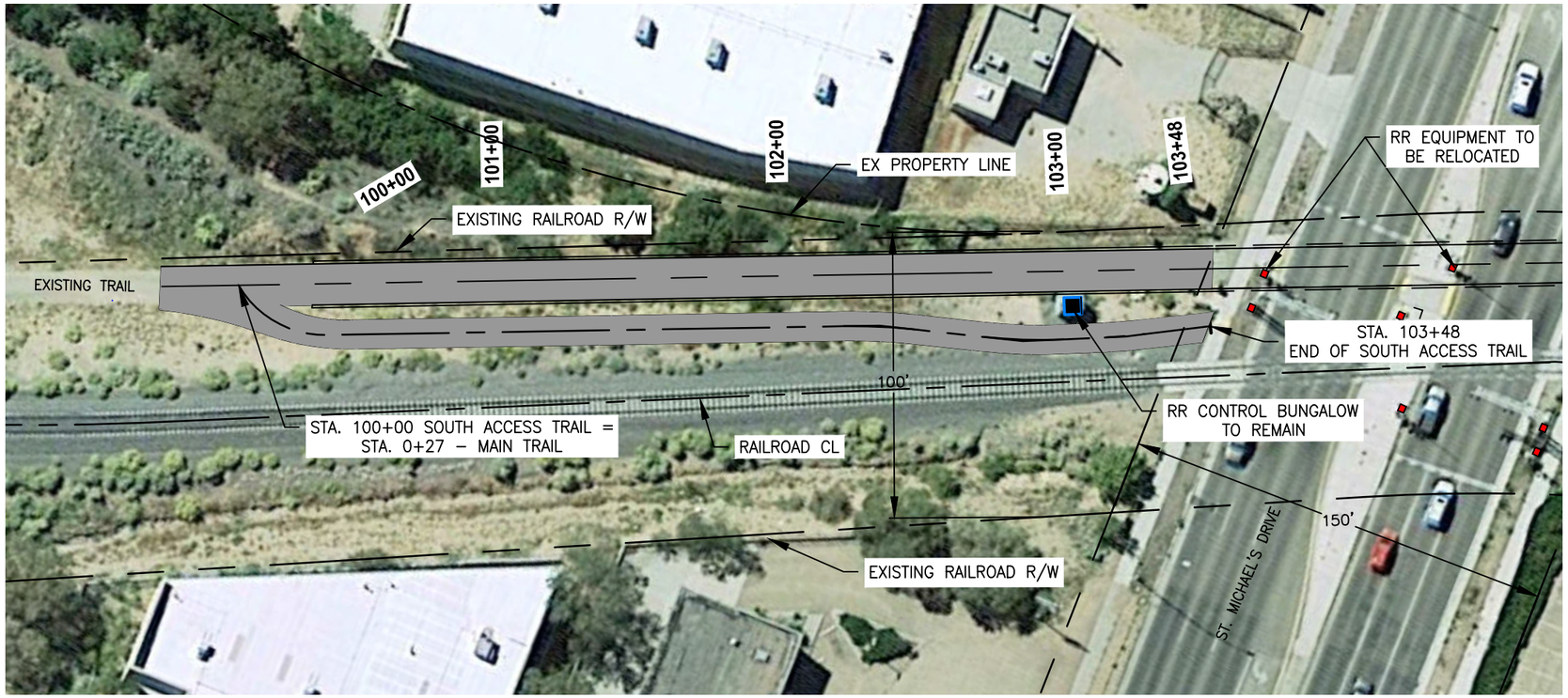
SANTA FE RAIL TRAIL
UNDERPASS AT ST.
MICHAEL'S DRIVE

MAINLINE RAIL TRAIL PLAN AND PROFILE

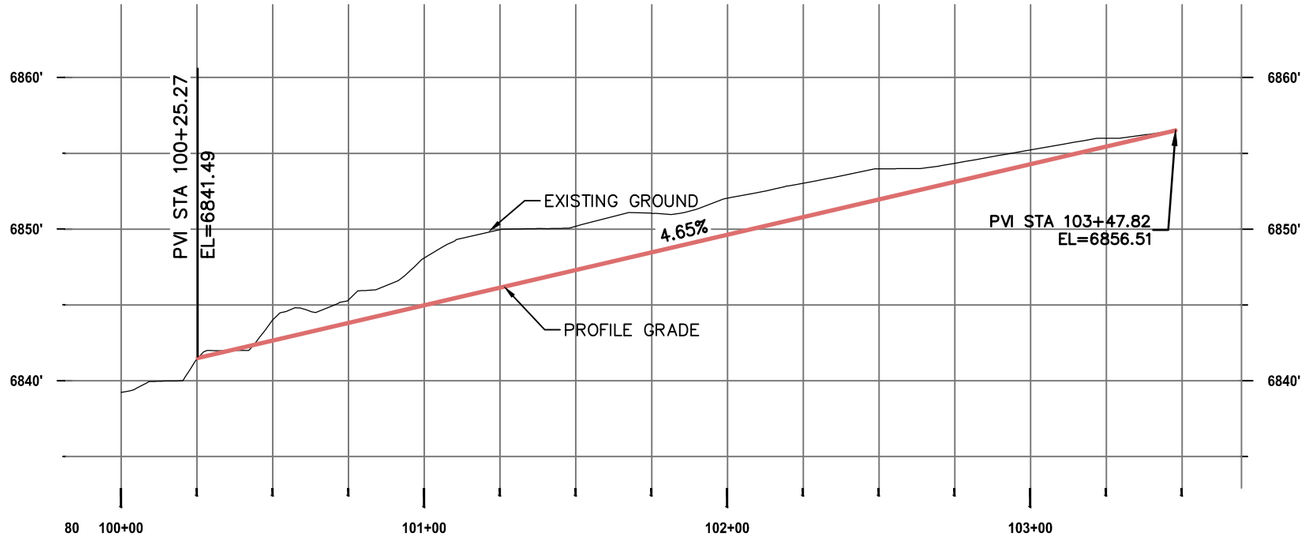
Figure 18b



OPTION WITH BUNGALOW RELOCATED

SCALE: 1"=50' HOR.

SOUTH ACCESS TRAIL



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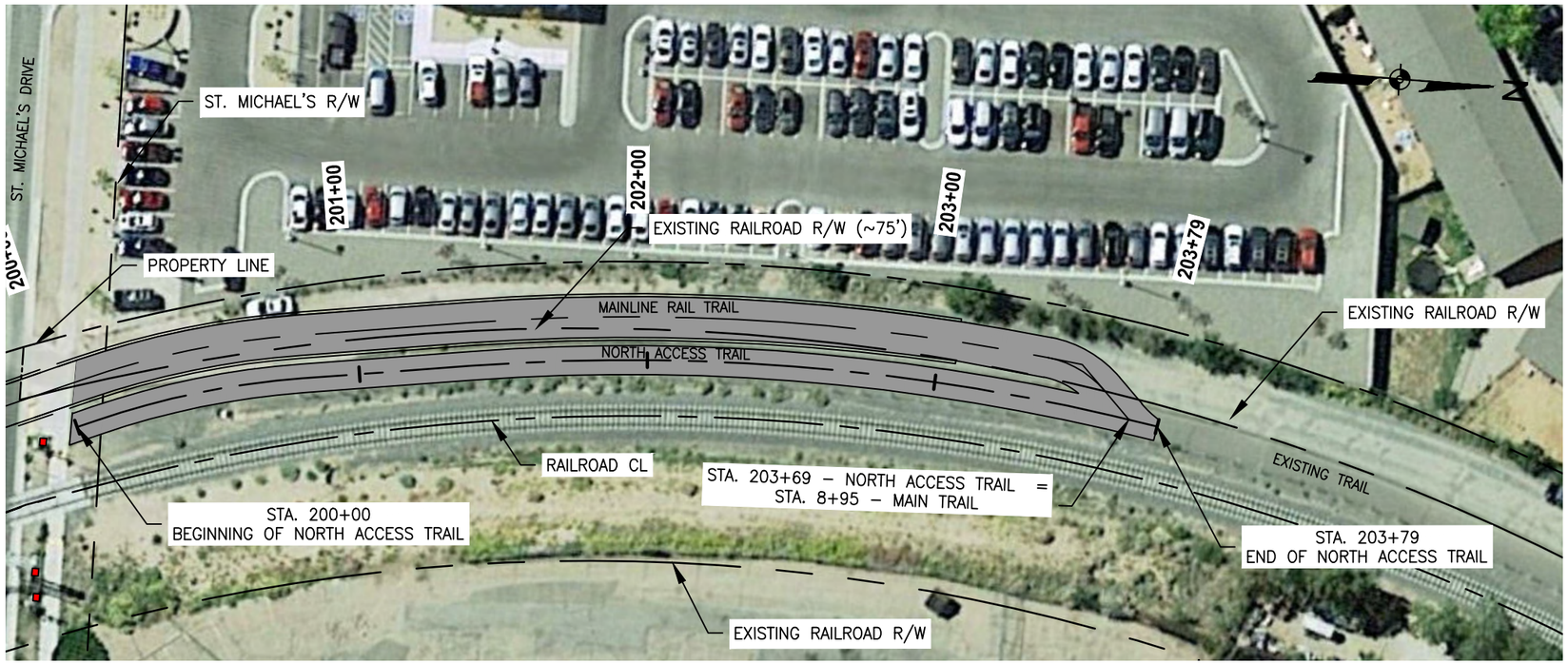
SANTA FE RAIL TRAIL
UNDERPASS AT ST.
MICHAEL'S DRIVE

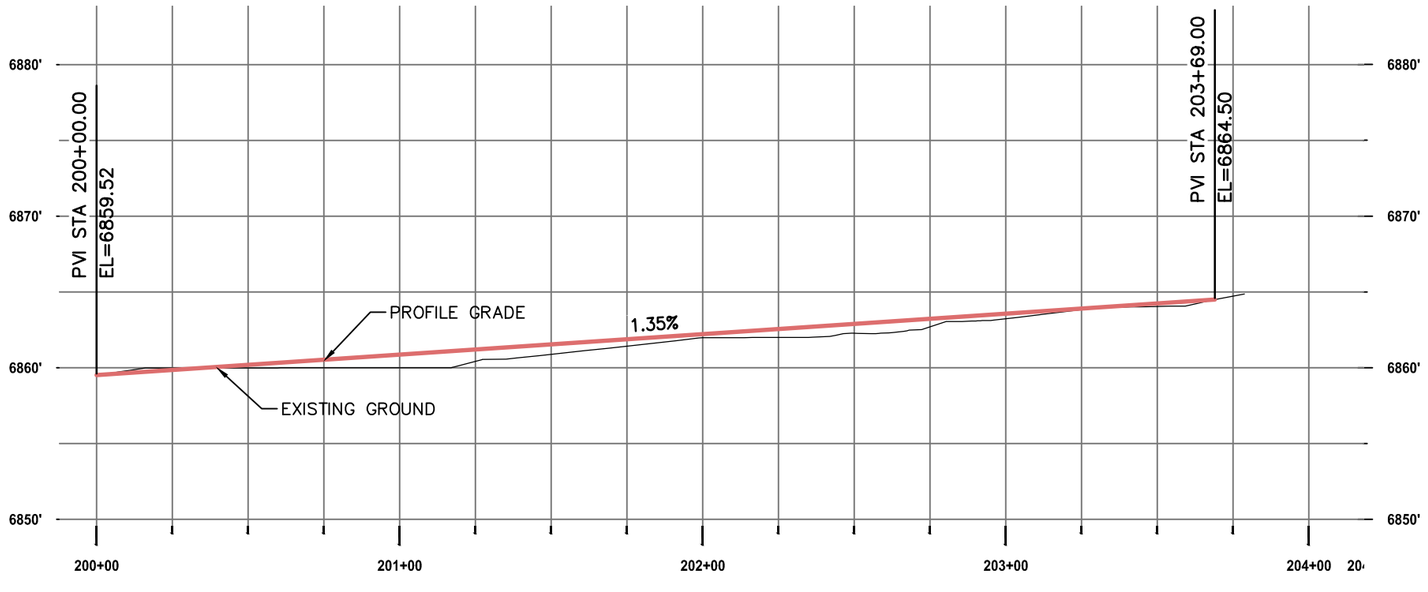
SOUTH ACCESS TRAIL PLAN AND PROFILE

Figure 19a



SCALE: 1"=50' HOR.

NORTH ACCESS TRAIL



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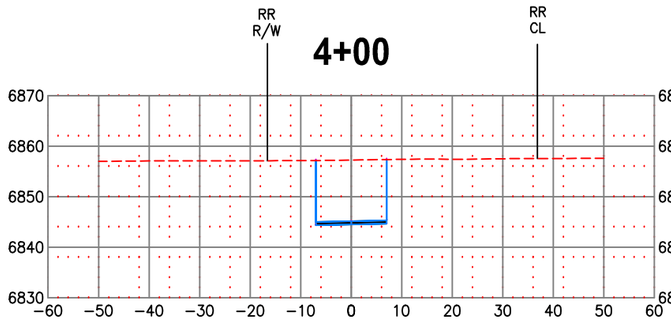
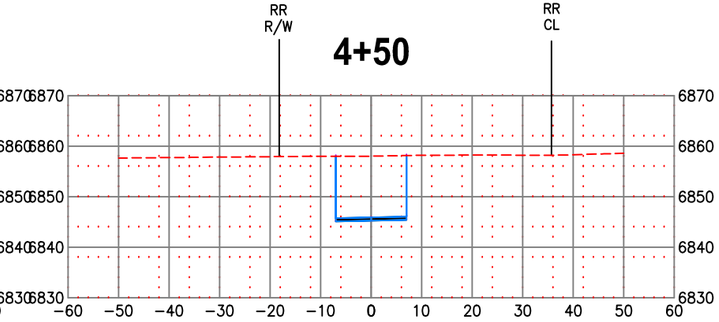
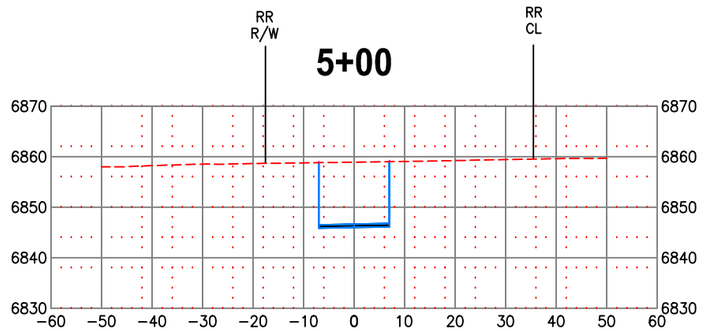
SANTA FE RAIL TRAIL
UNDERPASS AT ST.
MICHAEL'S DRIVE

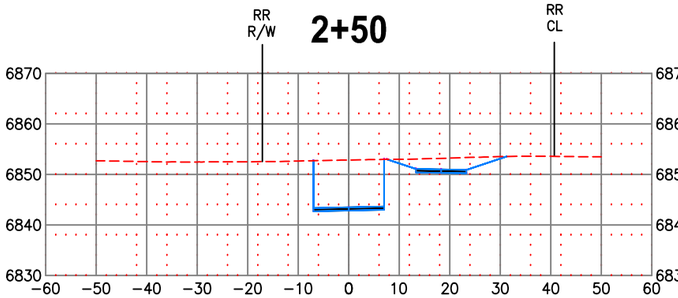
NORTH ACCESS TRAIL PLAN AND PROFILE

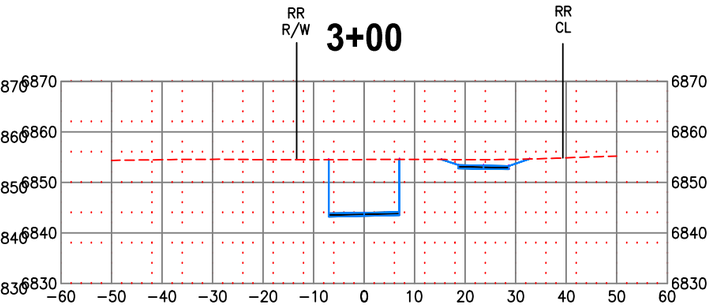
Figure 19b

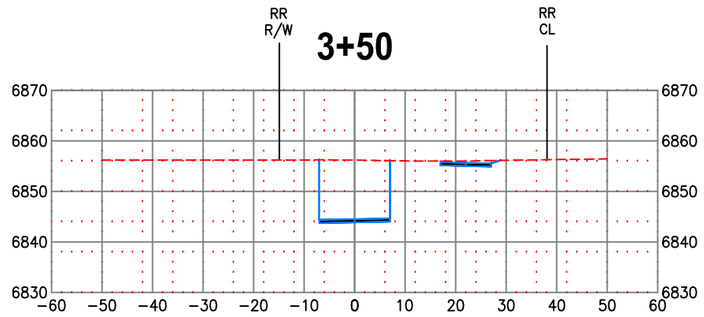


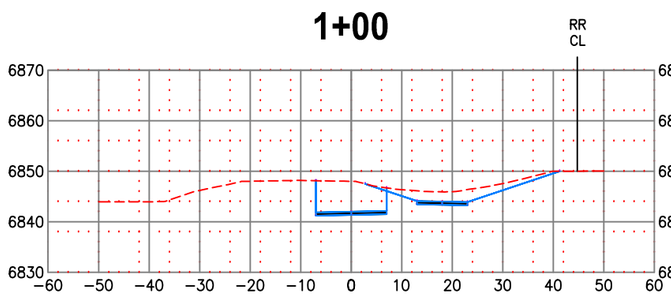


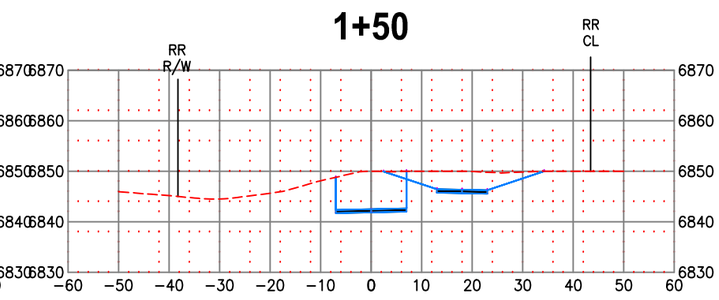


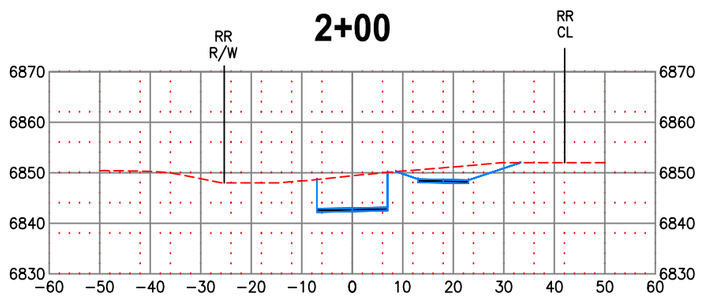












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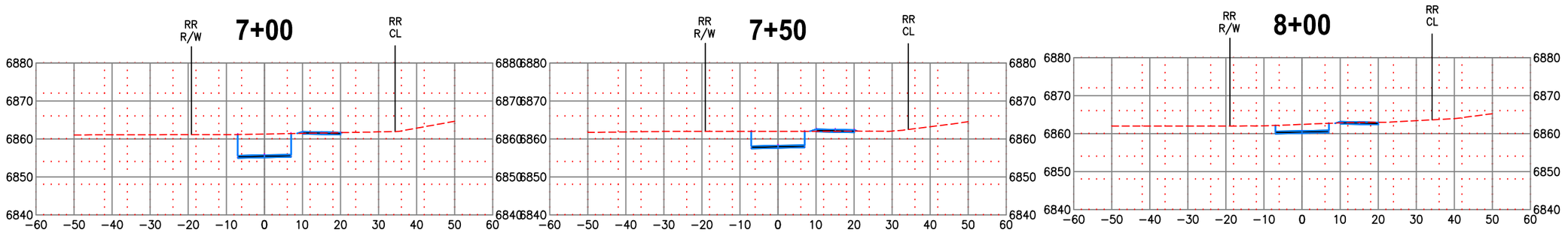
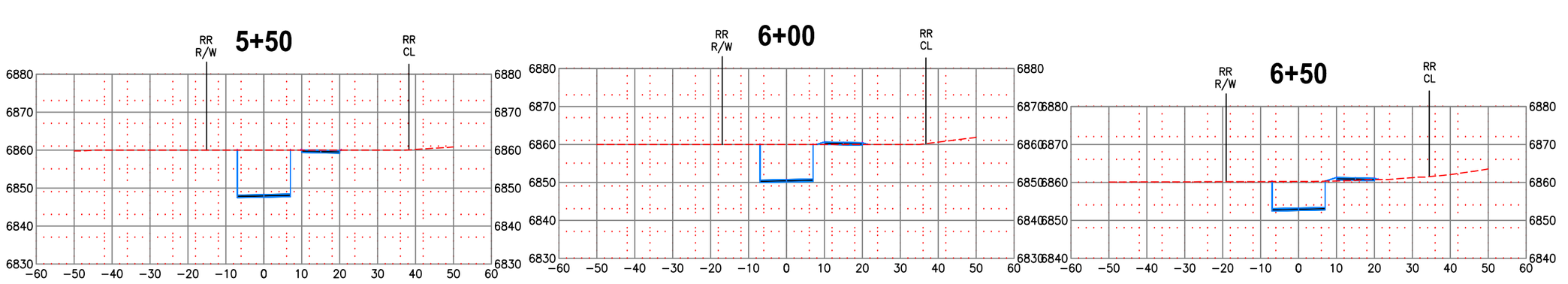
ST. MICHAEL'S DRIVE
RAIL–TRAIL UNDERPASS

CROSS SECTIONS
MAINLINE RAIL TRAIL

Figure 20a





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ST. MICHAEL'S DRIVE
RAIL–TRAIL UNDERPASS

CROSS SECTIONS
MAINLINE RAIL TRAIL Figure 20b

Storm Drainage

As discussed under the Geometry section above, a continuous grade from north to south can be maintained for the underpass and approaches; therefore, no drainage appurtenances will be required within the underpass structure as storm water entering the north end will be able to flow completely through to the south end. With a 2% cross slope along the bottom of the underpass structure, sloping from east to west, a drainage rundown at the south end would be used to convey the storm water into the existing swale on the west side of the trail, and ultimately into the Arroyo de los Pinos.

North of St. Michael's Drive, precipitation falling on the Access Trail will flow to the east as it currently does, into the swale between the trail and tracks. The 24-inch culvert pipe that currently crosses St. Michael's from north to south on the west side of the tracks will most likely need to be reconstructed in a similar configuration to divert runoff from this swale to a swale or storm drain south of St. Michael's between the trail and tracks. South of St. Michael's the runoff from the Access Trail will flow into a swale on the east side of the trail and then south to the Arroyo de los Pinos

Estimated Project Costs

The costs associated with the St. Michael's trail undercrossing will include design, construction, right-of-way acquisition and construction easements, and environmental clearance. For the construction costs, quantities of major bid items were calculated based on the conceptual design. Typical lump sum items such as mobilization, construction staking and construction traffic control were included as a percentage of the major bid items. For those items that cannot be quantified at this early stage a 25% contingency was applied to the subtotal of the major items and lump sum items. An additional 10% was added to the construction cost subtotal to account for construction management, inspection and contingencies.

Costs for the design phase were estimated at 10% of the construction costs and include field survey, geotechnical engineering, subsurface utility engineering and engineering design. Although it appears that right-of-way acquisition will not be needed for the proposed improvements, the ownership of the service road, which will be impacted by the project, is unknown at this point. The need for temporary construction easements on the private properties west of the corridor is another unknown, and a cost has been estimated and included for those. Table 1 provides a summary of the project costs. The engineer's opinion of probable construction cost is included in the **Appendix F**.

Table 12 Estimate Project Costs

Item	Cost
Design Phase	$225,000
Environmental Clearance	$35,000
Construction Phase	$2,235,500
Subtotal	**$2,495,500**
NMGRT	$204,500
Subtotal	**2,700,000**
Temporary Construction Easements	$50,000
Grand Total	**$2,750,000**

Potential Impacts

Constructability

The undercrossing construction would affect traffic on St. Michael's Drive during construction of the CBC, and would affect pedestrian and bicycle traffic during construction of the CBC and the approach trails. The CBC would need to be constructed in two primary phases: construction of the south half and then the north half. The CBC south half construction would require closure of all St. Michael's eastbound lanes. Eastbound traffic would be channeled into a single lane and diverted at an appropriate location west of the work zone to the westbound side of the road. The three westbound lanes would be channeled into two lanes approaching and through the work zone. The eastbound railroad warning signals and gates would need to be removed for construction of the south portion of the concrete box culvert and reset after completion of this phase. Temporary flashing signals and gates would need to be installed on the temporary west approach to the crossing to accommodate the single eastbound lane north of the median.

Immediately following completion of the south portion of the CBC the north portion would be constructed, requiring a full closure of the St. Michael's westbound lanes. Westbound traffic for this phase would be channeled into a single lane and diverted at an appropriate location east of the work zone into a single lane on the eastbound side of the road. The three eastbound lanes would be channeled into two lanes approaching the work zone. Temporary flashing signals and gates would need to be installed on the temporary east approach to the crossing to accommodate the single westbound lane south of the median.

As part of the final steps of completing the CBC construction, it will be desirable to eliminate the median curb ramps, flush median, sidewalk curb ramps, and detectable warning surfaces currently used for the at-grade trail crossing of St. Michael's. This work can be done as part of the replacement of the paving, curb and gutter, median pavement, and sidewalks prior to opening each side of the road to traffic.

The approach trails north and south of St. Michael's could be constructed concurrently with the construction of the CBC but completion of that work should not be allowed to delay opening traffic on St. Michael's when the CBC construction phases are completed. The approach trails will require detours for the trail traffic at appropriate locations north or south of the work zone. There may be opportunities to

maintain temporary access to St. Michael's along the rail corridor but pedestrian and bicycle traffic should then be directed to the signalized intersections east and west of the work zone as opposed to crossing St. Michael's at the work zone.

Other constructability considerations include selection of the culvert structure for the undercrossing and temporary shoring during construction. As previously mentioned, for this study it was assumed that the structure would be a cast-in-place concrete box culvert based on the NMDOT design standard drawings. Other options that may be viable and should be considered during preliminary design include multi-plate pipe arches, multi-plate arches, and precast segmented reinforced concrete box culverts. These would have the advantage of reducing the field installation time for the structure by eliminating need for field fabrication of reinforcing steel and concrete form work, and eliminating most concrete pours and curing time. This would reduce the time that traffic is impacted on St. Michael's and may result in a reduction in overall construction costs.

Temporary shoring will most likely be required to minimize the width of open trenches thus reducing the overall impacts to areas adjacent to the work zone. This may reduce or eliminate the need for temporary construction easements on adjacent private property and potentially reduce overall project costs.

Impacts to the Railroad

The trail underpass would be designed so there would be no impact to the adjacent railroad track. Close coordination with the railroad owner and operator would be necessary throughout the design phase for the proposed relocation of the controller bungalow, removal and relocation of existing warning signals and gates, and design of temporary flashing signal and gate systems to facilitate the traffic control phasing plan. During construction, coordination would need to continue since the work zone would be completely within the railroad right-of-way requiring railroad flagging operations, and for coordinating the actual relocation and installation of the temporary and permanent signal equipment.

Impacts to Utilities

An accurate assessment of impacts to utilities will be dependent on knowing the depth of bury of each utility. With only a Level D SUE survey, the depth of bury is unknown at this time. However, the potential impacts were estimated and are summarized below.

- The City of Santa Fe sanitary sewer line may need to be relocated to the space above the undercrossing, or relocated another way if that is not feasible due to the slope of the sewer line.
- The City's street lighting and traffic signal interconnect lines may need to be relocated to the space above the undercrossing.
- The City of Santa Fe water line may need to be relocated to the space above the undercrossing.
- The New Mexico Gas Company steel gas line running parallel to St. Michael's Drive may need to be relocated to the space above the undercrossing.
- The CenturyLink communications cables buried parallel to St. Michael's Drive may need to be relocated to the space above the undercrossing. The Century Link communication cable buried parallel to the railroad may remain undisturbed if it is close enough to the railroad.

- Verizon's fiber optic line running parallel to the railroad should be undisturbed if it is within 15 feet from the west side of the tracks.
- PNM's pad-mounted switchgear will be undisturbed. The electric conductors between the two switchgear may need to be relocated to the space above the undercrossing.
- The new trail can be designed to leave the railroad controller bungalow undisturbed but it is preferable to relocate the bungalow to the east so the Access Trail can be aligned as far from the tracks as possible.

Right-of-Way Impacts

The proposed improvements would stay within the existing railroad right-of-way limits south of St. Michael's. Temporary construction easements may be required on property to the west of the rail corridor but temporary shoring should minimize or eliminate the area impacted. As part of the Rail Runner improvements completed in 2010, the railroad right-of-way north of St. Michael's Drive was reduced to approximately 75 feet wide with the western 25 feet of the old right-of-way being identified as a service road. At this time the ownership of the service road is unknown so if this is not owned by the City of Santa Fe or the NMDOT, a right-of-way acquisition may be required. Temporary construction easements may also be required on the property to the west of the rail corridor but temporary shoring should minimize or eliminate the area impacted.

Other Considerations

Environmental

An environmental clearance and certification will be required for the proposed project. The level of effort is anticipated to be a categorical exclusion (CE) with either the NMDOT or City of Santa Fe as the lead agency. Environmental investigations would need to include biological and cultural assessments. Summaries of desktop biological and cultural reviews are included in the **Appendix G**.

The biological desktop review identified federally listed species that have the potential to occur within the project area; however, no habitat currently exists within the site and no recorded observations have been documented. A pre-construction nest survey is recommended in order to comply with the Migratory Bird Treaty Act if construction occurs within the breeding season from April through September.

The cultural desktop review identified that six cultural resource surveys have been conducted in the immediate vicinity of the proposed project between 1994 and 2014. Four of these surveys encompassed or overlapped the project area. The only historic property recorded in the project area during the course of these surveys was the rail line for the former Atchison Topeka and Santa Fe Railroad (now the BNSF Railway). Because the latest survey to be conducted in the project area was completed less than 10 years ago and encompasses the current proposed project area, there is no immediate requirement for an additional survey of this area. However, the previously recorded historic property should be revisited, the recording updated, and an assessment made of potential effects that may result from the proposed undertaking.

Safety and Security

Lighting through the undercrossing should be installed similar to the lighting in the St. Francis trail undercrossing (**Figure 21**). The lighting would both enhance safety of the trail user by allowing them to see the alignment of the trail, and security, as it would eliminate dark areas that could be used by vagrants. As this project progresses lighting design details will be forthcoming once the tunnel design has been developed more fully.

Figure 21. Lighting in the St. Francis Trail Undercrossing

For Conclusions, Recommendations and Costs, please see the Executive Summary of this report.

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Appendix A

Raw Count Data and Pedestrian Count Data

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Albuquerque, New Mexico 87102
505-348-4000
505-348-4055 Fax

Weather: Fair
Counted by: T Jones
Board #: 1079
Other: St. Michaels and 5th Street

File Name : St. Mich_5th Street-Weekday
Site Code : 00520110
Start Date : 1/10/2006
Page No : 1

Groups Printed- Cars - Trucks

	5th Street From North					St. Michael's From East					5th Street From South					St. Michael's From West					
Start Time	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	3	4	6	2	15	15	64	6	1	86	2	1	3	5	11	5	101	9	0	115	227
07:15 AM	4	7	9	4	24	9	102	11	0	122	1	6	3	26	36	8	157	14	0	179	361
07:30 AM	6	5	10	5	26	10	166	22	0	198	7	9	8	39	63	16	295	11	0	322	609
07:45 AM	9	18	12	4	43	10	228	25	0	263	12	27	12	61	112	12	339	21	0	372	790
Total	22	34	37	15	108	44	560	64	1	669	22	43	26	131	222	41	892	55	0	988	1987
08:00 AM	8	26	16	6	56	14	185	30	0	229	11	18	12	48	89	17	276	14	0	307	681
08:15 AM	4	15	23	4	46	16	190	22	0	228	12	11	12	25	60	18	233	14	0	260	594
08:30 AM	7	13	9	3	32	14	146	27	1	188	8	9	4	22	43	2	205	15	0	222	485
08:45 AM	6	11	15	9	41	10	205	26	1	242	7	7	8	22	44	8	186	16	0	210	537
Total	25	65	63	22	175	54	726	105	2	887	38	45	36	117	236	40	900	59	0	999	2297
09:00 AM	5	6	13	5	29	13	188	36	0	237	5	8	11	14	38	6	176	12	0	194	498
09:15 AM	5	15	13	7	40	8	204	33	0	245	2	10	6	15	33	5	183	9	1	198	516
09:30 AM	5	7	18	2	32	20	203	53	0	276	3	8	13	10	34	9	181	13	0	203	545
09:45 AM	4	12	13	5	34	29	238	37	0	304	6	8	18	13	45	10	205	11	0	226	609
Total	19	40	57	19	135	70	833	159	0	1062	16	34	48	52	150	30	745	45	1	821	2168
BREAK]																					
10:45 AM	0	1	0	0	1	0	0	0	0	0	8	9	19	17	53	5	227	18	1	251	305
Total	0	1	0	0	1	0	0	0	0	0	8	9	19	17	53	5	227	18	1	251	305
11:00 AM	6	4	15	10	35	17	277	40	0	334	11	11	19	17	58	6	193	13	0	212	639
11:15 AM	8	11	21	3	43	21	274	42	0	337	7	11	19	22	59	8	215	10	0	233	672
11:30 AM	9	15	14	8	46	11	324	43	0	378	5	9	26	23	63	4	252	14	0	270	757
11:45 AM	9	15	19	0	43	26	347	38	1	412	16	10	24	18	68	14	260	20	0	294	817
Total	32	45	69	21	167	75	1222	163	1	1461	39	41	88	80	248	32	920	57	0	1009	2885
12:00 PM	11	25	34	2	72	22	411	51	0	484	11	10	26	17	64	8	261	14	0	283	903
12:15 PM	16	18	30	4	68	29	366	48	1	444	8	15	20	9	52	18	320	14	0	352	916
12:30 PM	13	12	32	2	59	22	300	48	0	370	9	17	22	25	73	7	340	12	0	359	861
12:45 PM	13	22	22	4	61	29	317	47	0	393	16	17	17	29	79	18	349	17	0	384	917
Total	53	77	118	12	260	102	1394	194	1	1691	44	59	85	80	268	51	1270	57	0	1378	3597
01:00 PM	12	10	18	8	48	21	277	39	0	337	23	10	13	23	69	8	338	19	0	365	819
01:15 PM	9	15	17	5	46	15	256	39	0	310	18	10	21	9	58	7	281	18	0	306	720
01:30 PM	4	12	29	8	53	20	225	47	0	292	14	10	8	14	46	12	291	13	0	316	707
01:45 PM	8	10	12	12	42	13	255	53	0	321	0	0	0	0	0	0	0	0	0	0	363
Total	33	47	76	33	189	69	1013	178	0	1260	55	30	42	46	173	27	910	50	0	987	2609
BREAK]																					
02:45 PM	0	9	1	0	10	0	0	0	0	0	19	17	18	9	63	14	241	20	1	276	349
Total	0	9	1	0	10	0	0	0	0	0	19	17	18	9	63	14	241	20	1	276	349
03:00 PM	12	18	17	7	54	11	329	65	1	406	14	15	40	21	90	7	312	20	0	339	889
03:15 PM	10	19	13	5	47	13	283	57	1	354	22	16	27	57	122	12	301	20	0	333	856
03:30 PM	12	19	21	6	58	28	258	63	5	354	24	18	21	30	93	5	242	18	0	265	770
03:45 PM	12	21	25	7	65	13	291	51	0	355	19	20	23	26	88	9	240	18	0	267	775
Total	46	77	76	25	224	65	1161	236	7	1469	79	69	111	134	393	33	1095	76	0	1204	3290
04:00 PM	14	10	20	3	47	11	278	44	1	334	16	15	18	17	66	7	269	13	0	289	736
04:15 PM	12	13	26	3	54	13	297	32	0	342	11	14	17	21	63	3	259	18	0	280	739
04:30 PM	13	18	16	5	52	22	321	38	0	381	14	15	25	18	72	8	207	23	0	238	743
04:45 PM	14	37	26	7	84	17	303	43	0	363	10	19	14	19	62	10	248	17	0	275	784
Total	53	78	88	18	237	63	1199	157	1	1420	51	63	74	75	263	28	983	71	0	1082	3002
05:00 PM	13	41	43	2	99	18	408	60	4	490	18	13	21	15	67	3	285	14	0	302	958
05:15 PM	28	45	38	4	115	11	426	56	4	497	16	16	28	16	76	7	257	31	2	297	985
05:30 PM	18	20	23	6	67	24	300	26	0	350	14	9	21	9	53	6	228	19	0	253	723
05:45 PM	3	8	20	10	41	7	208	21	1	237	0	0	0	0	0	0	0	0	0	0	278
Total	62	114	124	22	322	60	1342	163	9	1574	48	38	70	40	196	16	770	64	2	852	2944

Wilson & Company
4900 Lang Avenue NE
Albuquerque, New Mexico 87102
505-348-4000
505-348-4055 Fax

Weather: Fair
Counted by: T. Jones
Board #: 1079
Other: St. Michaels and 5th Street

File Name : St. Mich_5th Street-Weekday
Site Code : 00520110
Start Date : 1/10/2006

Groups Printed- Cars - Trucks

	5th Street From North					St. Michael's From East					5th Street From South					St Michael's From West					
	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Int Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
Grand Total	345	587	709	187	1828	602	9450	1419	22	11493	419	448	617	781	2265	317	8953	572	5	9847	25433
Apprch %	18 9	32 1	38 8	10 2		5 2	82 2	12 3	0 2		18 5	19 8	27 2	34 5		3 2	90 9	5 8	0 1		
Total %	1.4	2.3	2.8	0.7	7.2	2.4	37.2	5.6	0.1	45.2	1.6	1.8	2.4	3.1	8.9	1.2	35.2	2.2	0	38.7	
Cars	335	578	691	178	1782	592	9231	1406	21	11250	416	447	616	779	2258	315	8840	570	5	9730	25020
% Cars	97.1	98.5	97.5	95.2	97.5	98.3	97.7	99.1	95.5	97.9	99.3	99.8	99.8	99.7	99.7	99.4	98.7	99.7	100	98.8	98.4
Trucks	10	9	18	9	46	10	219	13	1	243	3	1	1	2	7	2	113	2	0	117	413
% Trucks	2 9	1 5	2 5	4 8	2 5	1 7	2 3	0 9	4 5	2 1	0 7	0 2	0 2	0 3	0 3	0 6	1 3	0 3	0	1 2	1 6

Wilson & Company
4900 Lang Avenue NE
Albuquerque, New Mexico 87102
505-348-4000
505-348-4055 Fax

Weather: Fair
Counted by: T. Jones
Board #: 1079
Other: St. Michaels and 5th Street

File Name : St. Mich_5th Street-Weekday
Site Code : 00520110
Start Date : 1/10/2006
Page No : 3

	5th Street From North					St. Michael's From East					5th Street From South					St. Michael's From West					
Start Time	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	6	5	10	5	26	10	166	22	0	198	7	9	8	39	63	16	295	11	0	322	609
07:45 AM	9	18	12	4	43	10	228	25	0	263	12	27	12	61	112	12	339	21	0	372	790
08:00 AM	8	26	16	6	56	14	185	30	0	229	11	18	12	48	89	17	276	14	0	307	681
08:15 AM	4	15	23	4	46	16	190	22	0	228	12	11	12	25	60	13	233	14	0	260	594
Total Volume	27	64	61	19	171	50	769	99	0	918	42	65	44	173	324	58	1143	60	0	1261	2674
% App. Total	15.8	37.4	35.7	11.1		5.4	83.8	10.8	0		13	20.1	13.6	53.4		4.6	90.6	4.8	0		
PHF	.750	.615	.663	.792	.763	.781	.843	.825	.000	.873	.875	.602	.917	.709	.723	.853	.843	.714	.000	.847	.846

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45 AM					08:00 AM					07:30 AM					07:30 AM					
+0 mins.	9	18	12	4	43	13	188	35	0	237	7	9	8	39	63	16	295	11	0	322	
+15 mins	8	26	16	6	56	8	204	33	0	245	12	27	12	61	112	12	339	21	0	372	
+30 mins	4	15	23	4	46	20	203	53	0	276	11	18	12	48	89	17	276	14	0	307	
+45 mins.	7	13	9	3	32	29	238	37	0	304	12	11	12	25	60	13	233	14	0	260	
Total Volume	28	72	60	17	177	70	833	159	0	1062	42	65	44	173	324	58	1143	60	0	1261	
% App. Total	15.8	40.7	33.9	9.6		6.6	78.4	15	0		13	20.1	13.6	53.4		4.6	90.6	4.8	0		
PHF	.778	.692	.652	.708	.790	.603	.875	.750	.000	.873	.875	.602	.917	.709	.723	.853	.843	.714	.000	.847	

Wilson & Company
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Weather: Fair
Counted by: T Jones
Board # 1079
Other: St Michaels and 5th Street

File Name : St. Mich_5th Street-Weekday
Site Code : 00520110
Start Date : 1/10/2006

	5th Street From North					St. Michael's From East					5th Street From South					St Michael's From West					
Start Time	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Int Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	11	25	34	2	72	22	411	51	0	484	11	10	26	17	64	8	261	14	0	283	903
12:15 PM	16	18	30	4	68	29	366	48	1	444	8	15	20	9	52	18	320	14	0	352	916
12:30 PM	13	12	32	2	59	22	300	48	0	370	9	17	22	25	73	7	340	12	0	359	861
12:45 PM	13	22	22	4	61	29	317	47	0	393	16	17	17	29	79	18	349	17	0	384	917
Total Volume	53	77	118	12	260	102	1394	194	1	1691	44	59	85	80	268	51	1270	57	0	1378	3597
% App. Total	20.4	29.6	45.4	4.6		6	82.4	11.5	0.1		16.4	22	31.7	29.9		3.7	92.2	4.1	0		
PHF	.828	.770	.868	.750	.903	.879	.848	.951	.250	.873	.688	.868	.817	.690	.848	.708	.910	.838	.000	.897	.981

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM					11:30 AM					12:30 PM					12:15 PM				
+0 mins	11	25	34	2	72	11	324	43	0	378	9	17	22	25	73	18	320	14	0	352
+15 mins	16	18	30	4	68	26	347	38	1	412	16	17	17	29	79	7	340	12	0	359
+30 mins	13	12	32	2	59	22	411	51	0	484	23	10	13	23	69	18	349	17	0	384
+45 mins.	13	22	22	4	61	29	366	48	1	444	18	10	21	9	58	8	338	19	0	365
Total Volume	53	77	118	12	260	88	1448	180	2	1718	66	54	73	86	279	51	1347	62	0	1460
% App. Total	20.4	29.6	45.4	4.6		5.1	84.3	10.5	0.1		23.7	19.4	26.2	30.8		3.5	92.3	4.2	0	
PHF	.828	.770	.868	.750	.903	.759	.881	.882	.500	.887	.717	.794	.830	.741	.883	.708	.965	.816	.000	.951

Wilson & Company
4900 Lang Avenue NE
Albuquerque, New Mexico 87102
505-348-4000
505-348-4055 Fax

Weather: Fair
Counted by: T. Jones
Board #: 1079
Other: St. Michaels and 5th Street

File Name : St Mich_5th Street-Weekday
Site Code : 00520110
Start Date : 1/10/2006
Page No : 5

	5th Street From North					St. Michael's From East					5th Street From South					St Michael's From West					
Start Time	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Int Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	13	18	16	5	52	22	321	38	0	381	14	15	25	18	72	8	207	23	0	238	743
04:45 PM	14	37	26	7	84	17	303	43	0	363	10	19	14	19	62	10	248	17	0	275	784
05:00 PM	13	41	43	2	99	18	408	60	4	490	18	13	21	15	67	3	285	14	0	302	958
05:15 PM	28	45	38	4	115	11	426	56	4	497	16	16	28	16	76	7	257	31	2	297	985
Total Volume	68	141	123	18	350	68	1458	197	8	1731	58	63	88	68	277	28	997	85	2	1112	3470
% App. Total	19.4	40.3	35.1	5.1		3.9	84.2	11.4	0.5		20.9	22.7	31.8	24.5		2.5	89.7	7.6	0.2		
PHF	.607	.783	.715	.643	.761	.773	.856	.821	.500	.871	.806	.829	.786	.895	.911	.700	.875	.685	.250	.921	.881

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM					04:30 PM					03:00 PM					02:45 PM				
+0 mins	14	37	26	7	84	22	321	38	0	381	14	15	40	21	90	14	241	20	1	276
+15 mins	13	41	43	2	99	17	303	43	0	363	22	16	27	57	122	7	312	20	0	339
+30 mins	28	45	38	4	115	18	408	60	4	490	24	18	21	30	93	12	301	20	0	333
+45 mins.	18	20	23	6	67	11	426	56	4	497	19	20	23	26	88	5	242	18	0	265
Total Volume	73	143	130	19	365	68	1458	197	8	1731	79	69	111	134	393	38	1096	78	1	1213
% App. Total	20	39.2	35.6	5.2		3.9	84.2	11.4	0.5		20.1	17.6	28.2	34.1		3.1	90.4	6.4	0.1	
PHF	.652	.794	.756	.679	.793	.773	.856	.821	.500	.871	.823	.863	.694	.588	.805	.679	.878	.975	.250	.895

Wilson & Company
4900 Lang Avenue NE
Albuquerque, New Mexico 87102
505-348-4000
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Weather: Fair
Counted by: KR/TJ
Board # 1143
Other: St Michaels and 5th Street

File Name : St Mich_5th Street-Friday
Site Code : 00220210
Start Date : 2/10/2006
Page No : 1

Groups Printed- Cars - Trucks

	5th Street From North					St. Michael's From East					5th Street From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
07:00 AM	2	2	3	1	8	3	68	3	0	74	8	2	1	0	11	4	91	4	0	99	192
07:15 AM	2	2	9	8	21	11	106	4	1	122	20	10	2	0	32	5	124	4	0	133	308
07:30 AM	7	7	18	5	37	8	144	15	0	167	38	10	4	0	52	11	177	3	0	191	447
07:45 AM	9	21	12	2	44	14	212	29	0	255	55	21	6	0	82	18	264	11	0	293	674
Total	20	32	42	16	110	36	530	51	1	618	121	43	13	0	177	38	656	22	0	716	1621
08:00 AM	10	17	22	1	50	11	208	36	0	255	64	21	11	0	96	30	247	6	0	283	684
08:15 AM	3	7	10	0	20	20	150	17	0	187	35	23	20	0	78	17	262	9	0	288	573
08:30 AM	3	13	14	9	39	8	186	15	0	209	22	5	2	0	29	15	199	7	0	221	498
08:45 AM	6	15	12	8	41	8	204	29	0	241	23	8	8	0	39	13	205	9	0	227	548
Total	22	52	58	18	150	47	748	97	0	892	144	57	41	0	242	75	913	31	0	1019	2303
09:00 AM	6	13	15	10	44	11	215	35	0	261	20	8	7	0	35	20	193	0	0	213	553
09:15 AM	4	9	10	5	28	13	226	36	0	275	10	7	22	0	39	19	180	17	0	216	558
09:30 AM	7	9	16	5	37	14	217	36	0	267	31	7	6	0	44	23	324	15	0	362	710
09:45 AM	6	12	17	0	35	23	251	46	0	320	20	14	13	0	47	21	242	15	0	278	680
Total	23	43	58	20	144	61	909	153	0	1123	81	36	48	0	165	83	939	47	0	1069	2501
Break]																					
11:00 AM	7	20	12	10	49	24	286	39	0	349	42	12	18	0	72	18	196	11	0	225	695
11:15 AM	4	13	24	5	46	14	314	53	0	381	25	6	20	0	51	11	245	17	0	273	751
11:30 AM	7	20	17	6	50	20	316	48	0	384	37	9	16	0	62	13	162	6	0	181	677
11:45 AM	4	9	24	7	44	24	334	41	0	399	36	12	24	0	72	14	257	2	0	273	788
Total	22	62	77	28	189	82	1250	181	0	1513	140	39	78	0	257	56	860	36	0	952	2911
12:00 PM	18	30	28	3	79	18	339	58	0	415	38	10	19	1	68	11	218	24	0	253	815
12:15 PM	19	28	30	3	80	18	404	58	1	481	58	8	20	0	86	18	269	23	0	310	957
12:30 PM	4	10	23	4	41	24	283	33	0	340	42	8	11	0	61	9	179	50	0	238	680
12:45 PM	13	38	45	1	97	24	203	26	0	253	49	11	27	0	87	10	280	15	0	305	742
Total	54	106	126	11	297	84	1229	175	1	1489	187	37	77	1	302	48	946	112	0	1106	3194
01:00 PM	12	28	37	8	85	15	294	44	0	353	50	15	26	0	91	18	272	17	0	307	836
01:15 PM	11	14	29	5	59	23	379	44	0	446	39	18	34	0	91	14	304	14	0	332	928
01:30 PM	11	12	25	7	55	17	272	37	0	326	44	23	21	0	88	16	283	24	0	323	792
01:45 PM	5	17	28	8	58	12	330	63	0	405	46	12	25	0	83	17	297	16	0	330	876
Total	39	71	119	28	257	67	1275	188	0	1530	179	68	106	0	353	65	1156	71	0	1292	3432
Break]																					
03:00 PM	8	20	21	2	51	13	360	61	0	434	34	14	18	0	66	9	270	39	0	318	869
03:15 PM	7	14	41	3	65	21	356	56	2	435	42	16	23	0	81	18	292	34	0	344	925
03:30 PM	14	27	31	2	74	12	336	65	0	413	26	21	31	0	78	24	269	40	0	333	898
03:45 PM	12	22	37	4	75	18	327	54	0	399	32	26	34	0	92	13	261	37	0	311	877
Total	41	83	130	11	265	64	1379	236	2	1681	134	77	106	0	317	64	1092	150	0	1306	3569
04:00 PM	13	21	29	8	71	20	362	54	1	437	37	28	39	0	104	8	263	41	0	312	924
04:15 PM	10	27	30	5	72	28	349	57	3	437	39	19	26	0	84	20	221	12	0	253	846
04:30 PM	14	18	34	7	73	27	302	45	2	376	26	17	18	0	61	5	207	20	0	232	742
04:45 PM	17	11	19	6	53	19	493	43	2	557	40	17	25	0	82	9	247	23	0	279	971
Total	54	77	112	26	269	94	1506	199	8	1807	142	81	108	0	331	42	938	96	0	1076	3483
05:00 PM	15	33	25	4	77	15	374	55	1	445	38	21	29	0	88	9	238	32	0	279	889
05:15 PM	23	42	30	7	102	13	318	49	0	380	20	13	16	0	49	17	224	11	0	252	783
05:30 PM	18	24	29	9	80	18	349	47	0	414	33	16	12	0	61	10	183	10	0	203	758
05:45 PM	10	16	21	4	51	16	303	33	0	352	26	5	9	0	40	10	170	17	0	197	640
Total	66	115	105	24	310	62	1344	184	1	1591	117	55	66	0	238	46	815	70	0	931	3070
Grand Total	341	641	827	162	1991	597	10170	1464	13	12244	1245	493	643	1	2382	517	8315	635	0	9467	26084
Apprch %	17 1	32 2	41 5	9 1		4 9	83.1	12	0 1		52 3	20 7	27	0		5 5	87 8	6 7	0		
Total %	1.3	2.5	3.2	0.7	7.6	2.3	39	5.6	0	46.9	4.8	1.9	2.5	0	9.1	2	31.9	2.4	0	36.3	
1 - Cars	334	631	809	177	1951	585	9960	1443	13	12001	1235	491	634	1	2361	512	8177	631	0	9320	25633
% 1 - Cars	97 9	98 4	97 8	97 3	98	98	97 9	98 6	100	98	99 2	99 6	98 6	100	99 1	99	98 3	99 4	0	98 4	98 3

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File Name : St. Mich_5th Street-Friday
Site Code : 00220210
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Page No : 2

Groups Printed- Cars - Trucks

	5th Street From North					St. Michael's From East					5th Street From South					St. Michael's From West					
	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
2 - Trucks	7	10	18	5	40	12	210	21	0	243	10	2	9	0	21	5	138	4	0	147	451
% 2 - Trucks	2 1	1 6	2 2	2 7	2	2	2 1	1 4	0	2	0 8	0 4	1 4	0	0 9	1	1 7	0 6	0	1 6	1 7

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File Name : St Mich_5th Street-Friday
Site Code : 00220210
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Page No : 3

	5th Street From North					St. Michael's From East					5th Street From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:00 AM																					
09:00 AM	6	13	15	10	44	11	215	35	0	261	20	8	7	0	35	20	193	0	0	213	553
09:15 AM	4	9	10	5	28	13	226	36	0	275	10	7	22	0	39	19	180	17	0	216	558
09:30 AM	7	9	16	5	37	14	217	36	0	267	31	7	6	0	44	23	324	15	0	362	710
09:45 AM	6	12	17	0	35	23	251	46	0	320	20	14	13	0	47	21	242	15	0	278	680
Total Volume	23	43	58	20	144	61	909	153	0	1123	81	36	48	0	165	83	939	47	0	1069	2501
% App. Total	16	29.9	40.3	13.9		5.4	80.9	13.6	0		49.1	21.8	29.1	0		7.8	87.8	4.4	0		
PHF	.821	.827	.853	.500	.818	.663	.905	.832	.000	.877	.653	.643	.545	.000	.878	.902	.725	.691	.000	.738	.881

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File Name : St Mich_5th Street-Friday
Site Code : 00220210
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Page No : 4

	5th Street From North					St. Michael's From East					5th Street From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	12	28	37	8	85	15	294	44	0	353	50	15	26	0	91	18	272	17	0	307	836
01:15 PM	11	14	29	5	59	23	379	44	0	446	39	18	34	0	91	14	304	14	0	332	928
01:30 PM	11	12	25	7	55	17	272	37	0	326	44	23	21	0	88	16	283	24	0	323	792
01:45 PM	5	17	28	8	58	12	330	63	0	405	46	12	25	0	83	17	297	16	0	330	876
Total Volume	39	71	119	28	257	67	1275	188	0	1530	179	68	106	0	353	65	1156	71	0	1292	3432
% App. Total	15.2	27.6	46.3	10.9		4.4	83.3	12.3	0		50.7	19.3	30	0		5	89.5	5.5	0		
PHF	.813	.634	.804	.875	.756	.728	.841	.746	.000	.858	.895	.739	.779	.000	.970	.903	.951	.740	.000	.973	.925

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File Name : St Mich_5th Street-Friday
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	5th Street From North					St. Michael's From East					5th Street From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	7	14	41	3	65	21	356	56	2	435	42	16	23	0	81	18	292	34	0	344	925
03:30 PM	14	27	31	2	74	12	336	65	0	413	26	21	31	0	78	24	269	40	0	333	898
03:45 PM	12	22	37	4	75	18	327	54	0	399	32	26	34	0	92	13	261	37	0	311	877
04:00 PM	13	21	29	8	71	20	362	54	1	437	37	28	39	0	104	8	263	41	0	312	924
Total Volume	46	84	138	17	285	71	1381	229	3	1684	137	91	127	0	355	63	1085	152	0	1300	3624
% App. Total	16.1	29.5	48.4	6		4.2	82	13.6	0.2		38.6	25.6	35.8	0		4.8	83.5	11.7	0		
PHF	.821	.778	.841	.531	.950	.845	.954	.881	.375	.963	.815	.813	.814	.000	.853	.656	.929	.927	.000	.945	.979

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Weather: Fair
Counted by: B. Weiss
Board #: 1143
Other: St. Michael's and Calle Lorca

File Name : St Mich_Calle Lorca-Weekday
Site Code : 00120117
Start Date : 1/17/2006
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St Michael's From West					Int. Total
	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	0	0	0	0	0	2	7	11	0	20	2	87	17	0	106	126
07:15 AM	1	1	2	5	9	5	112	4	0	121	11	5	6	0	22	10	134	22	0	166	318
07:30 AM	2	8	4	6	20	7	127	1	0	135	14	12	8	0	34	9	211	35	0	255	444
07:45 AM	5	7	7	2	21	6	186	8	1	201	10	23	17	0	50	13	273	46	0	332	604
Total	8	16	13	13	50	18	425	13	1	457	37	47	42	0	126	34	705	120	0	859	1492
08:00 AM	2	3	3	10	18	12	280	6	0	298	11	18	11	0	40	7	263	55	0	325	681
08:15 AM	2	6	3	10	21	8	211	7	1	227	8	11	9	0	28	6	251	36	0	293	569
08:30 AM	7	4	6	4	21	8	200	7	0	215	9	11	5	0	25	8	200	19	0	227	488
08:45 AM	4	5	8	4	21	18	236	8	0	262	14	13	13	0	40	14	191	21	0	226	549
Total	15	18	20	28	81	46	927	28	1	1002	42	53	38	0	133	35	905	131	0	1071	2287
09:00 AM	6	3	16	9	34	28	262	8	0	298	9	11	13	0	33	13	233	24	0	270	635
09:15 AM	9	4	12	6	31	15	221	9	1	246	13	14	4	0	31	8	223	30	0	261	569
09:30 AM	9	4	14	16	43	13	237	8	0	258	8	8	6	0	22	6	202	21	0	229	552
09:45 AM	8	6	13	9	36	23	251	10	2	286	4	4	7	0	15	11	230	22	0	263	600
Total	32	17	55	40	144	79	971	35	3	1088	34	37	30	0	101	38	888	97	0	1023	2356
Break]																					
11:00 AM	15	4	19	10	48	12	299	7	0	318	11	6	3	0	20	9	267	33	0	309	695
11:15 AM	23	14	9	3	49	15	329	6	1	351	6	3	5	0	14	5	289	27	0	321	735
11:30 AM	14	12	20	10	56	21	332	9	2	364	3	10	8	0	21	14	263	33	0	310	751
11:45 AM	25	2	25	15	67	16	370	12	3	401	7	8	13	0	28	12	295	32	0	339	835
Total	77	32	73	38	220	64	1330	34	6	1434	27	27	29	0	83	40	1114	125	0	1279	3016
12:00 PM	28	10	19	16	73	12	405	14	0	431	8	14	11	0	33	13	300	35	0	348	885
12:15 PM	37	12	17	10	76	26	431	13	1	471	5	8	9	0	22	19	328	42	0	389	958
12:30 PM	21	6	23	8	114	16	317	8	1	342	9	13	10	0	32	8	378	48	0	434	922
12:45 PM	26	11	16	5	58	19	336	21	0	376	9	11	20	0	40	9	392	54	0	455	929
Total	112	95	75	39	321	73	1489	56	2	1620	31	46	50	0	127	49	1398	179	0	1626	3694
01:00 PM	19	13	11	23	66	11	284	6	1	302	12	10	8	0	30	15	330	47	0	392	790
01:15 PM	30	9	26	12	77	14	331	11	0	356	11	14	9	0	34	16	349	40	0	405	872
01:30 PM	24	5	20	17	66	16	334	6	0	356	7	9	4	0	20	14	328	53	0	395	837
01:45 PM	12	18	15	12	57	11	281	10	0	302	12	11	9	0	32	22	329	39	0	390	781
Total	85	45	72	64	266	52	1230	33	1	1316	42	44	30	0	116	67	1336	179	0	1582	3280
Break]																					
03:00 PM	21	10	19	11	61	6	293	8	0	307	5	15	13	0	33	11	310	33	0	354	755
03:15 PM	17	48	22	12	99	19	345	13	0	377	12	11	12	1	36	10	323	57	0	390	902
03:30 PM	33	20	18	22	93	15	323	10	0	348	9	10	14	0	33	16	295	33	0	344	818
03:45 PM	19	11	25	8	63	9	333	14	0	356	8	7	10	0	25	17	299	36	0	352	796
Total	90	89	84	53	316	49	1294	45	0	1388	34	43	49	1	127	54	1227	159	0	1440	3271
04:00 PM	20	14	19	10	63	7	248	7	0	262	7	11	5	0	23	12	265	30	0	307	655
04:15 PM	32	16	13	7	68	10	267	9	0	286	8	7	10	0	25	14	289	36	0	339	718
04:30 PM	19	17	15	8	59	6	292	2	0	300	8	12	9	0	29	21	284	24	0	329	717
04:45 PM	27	17	27	12	83	16	299	11	0	326	10	6	17	0	33	16	289	29	0	334	776
Total	98	64	74	37	273	39	1106	29	0	1174	33	36	41	0	110	63	1127	119	0	1309	2866
05:00 PM	31	20	27	9	87	9	316	19	1	345	12	6	11	0	29	16	304	31	0	351	812
05:15 PM	24	17	26	9	76	3	357	15	0	375	9	10	9	0	34	13	258	23	0	294	779
05:30 PM	17	10	10	7	44	7	262	6	0	275	9	10	9	0	28	11	213	17	0	241	588
05:45 PM	10	5	10	21	46	5	245	6	0	256	8	6	14	0	28	12	216	22	0	250	580
Total	82	52	73	46	253	24	1180	46	1	1251	43	31	45	0	119	52	991	93	0	1136	2759
Grand Total	599	428	539	358	1924	444	9952	319	15	10730	323	364	354	1	1042	432	9691	1202	0	11325	25021
Apprch %	31 1	22 2	28	18 6		4 1	92 7	3	0 1		31	34 9	34	0 1		3 8	85 6	10 6	0		
Total %	2.4	1.7	2.2	1.4	7.7	1.8	39.8	1.3	0.1	42.9	1.3	1.5	1.4	0	4.2	1.7	38 7	4.8	0	45.3	
Cars	597	427	538	355	1917	441	9871	313	15	10640	320	364	351	1	1036	428	9606	1199	0	11233	24826
% Cars	99 7	99 8	99 8	99 2	99 6	99 3	99 2	98 1	100	99 2	99 1	100	99 2	100	99 4	99 1	99 1	99 8	0	99 2	99 2

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Weather: Fair
Counted by: B. Weiss
Board #: 1143
Other: St. Michael's and Calle Lorca

File Name : St. Mich_Calle Lorca-Weekday
Site Code : 00120117
Start Date : 1/17/2006
Page No : 2

Groups Printed- Cars - Trucks

	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St Michael's From West					Int. Total
	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
Trucks	2	1	1	3	7	3	81	6	0	90	3	0	3	0	6	4	85	3	0	92	195
% Trucks	03	02	02	08	04	07	08	19	0	08	09	0	08	0	06	09	09	02	0	08	08

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File Name : St. Mich_Calle Lorca-Weekday
Site Code : 00120117
Start Date : 1/17/2006

	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:00 AM																					
09:00 AM	6	3	16	9	34	28	262	8	0	298	9	11	13	0	33	13	233	24	0	270	635
09:15 AM	9	4	12	6	31	15	221	9	1	246	13	14	4	0	31	8	223	30	0	261	569
09:30 AM	9	4	14	16	43	13	237	8	0	258	8	8	6	0	22	6	202	21	0	229	552
09:45 AM	8	6	13	9	36	23	251	10	2	286	4	4	7	0	15	11	230	22	0	263	600
Total Volume	32	17	55	40	144	79	971	35	3	1088	34	37	30	0	101	38	888	97	0	1023	2356
% App. Total	22.2	11.8	38.2	27.8		7.3	89.2	3.2	0.3		33.7	36.6	29.7	0		3.7	86.8	9.5	0		
PHF	.889	.708	.859	.625	.837	.705	.927	.875	.375	.913	.654	.661	.577	.000	.765	.731	.953	.808	.000	.947	.928

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File Name : St. Mich_Calle Lorca-Weekday
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	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	28	10	19	16	73	12	405	14	0	431	8	14	11	0	33	13	300	35	0	348	885
12:15 PM	37	12	17	10	76	26	431	13	1	471	5	8	9	0	22	19	328	42	0	389	958
12:30 PM	21	62	23	8	114	16	317	8	1	342	9	13	10	0	32	8	378	48	0	434	922
12:45 PM	26	11	16	5	58	19	336	21	0	376	9	11	20	0	40	9	392	54	0	455	929
Total Volume	112	95	75	39	321	73	1489	56	2	1620	31	46	50	0	127	49	1398	179	0	1626	3694
% App. Total	34.9	29.6	23.4	12.1		4.5	91.9	3.5	0.1		24.4	36.2	39.4	0		3	86	11	0		
PHF	.757	.383	.815	.609	.704	.702	.864	.667	.500	.860	.861	.821	.625	.000	.794	.645	.892	.829	.000	.893	.964

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File Name : St. Mich_Calle Lorca-Weekday
Site Code : 00120117
Start Date : 1/17/2006

	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	21	10	19	11	61	6	293	8	0	307	5	15	13	0	33	11	310	33	0	354	755
03:15 PM	17	48	22	12	99	19	345	13	0	377	12	11	12	1	36	10	323	57	0	390	902
03:30 PM	33	20	18	22	93	15	323	10	0	348	9	10	14	0	33	16	295	33	0	344	818
03:45 PM	19	11	25	8	63	9	333	14	0	356	8	7	10	0	25	17	299	36	0	352	796
Total Volume	90	89	84	53	316	49	1294	45	0	1388	34	43	49	1	127	54	1227	159	0	1440	3271
% App. Total	28.5	28.2	26.6	16.8		3.5	93.2	3.2	0		26.8	33.9	38.6	0.8		3.8	85.2	11	0		
PHF	.682	.464	.840	.602	.798	.645	.938	.804	.000	.920	.708	.717	.875	.250	.882	.794	.950	.697	.000	.923	.907

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Albuquerque, New Mexico 87102
505-348-4000
505-348-4055 Fax

Weather:
Counted by:
Board #:
Other:

File Name : St. Mich_Calle Lorca-Friday
Site Code : 00220203
Start Date : 2/3/2006
Page No : 1

Groups Printed- Cars - Trucks

	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	10	0	1	0	11	4	80	1	1	86	3	12	5	7	27	6	101	15	0	122	246
07:15 AM	11	4	3	0	18	4	124	5	0	133	2	10	8	7	27	3	140	20	0	163	341
07:30 AM	7	3	3	0	13	8	156	13	0	177	6	11	12	7	36	14	193	27	0	234	460
07:45 AM	18	4	3	0	25	19	227	4	1	251	8	24	15	11	58	13	290	55	0	358	692
Total	46	11	10	0	67	35	587	23	2	647	19	57	40	32	148	36	724	117	0	877	1739
08:00 AM	14	6	9	0	29	18	243	10	3	274	9	12	12	7	40	16	229	65	0	310	653
08:15 AM	15	8	2	0	25	14	208	9	0	231	12	15	12	8	47	11	210	32	0	253	556
08:30 AM	12	4	10	0	26	13	242	13	0	268	0	11	7	8	26	10	176	30	0	216	536
08:45 AM	37	3	12	0	52	17	286	6	0	309	1	10	12	4	27	12	221	25	0	258	646
Total	78	21	33	0	132	62	979	38	3	1082	22	48	43	27	140	49	836	152	0	1037	2391
09:00 AM	15	4	8	0	27	15	264	6	1	286	4	13	12	11	40	11	182	20	0	213	566
09:15 AM	19	3	8	0	30	34	252	3	2	291	2	11	5	4	22	10	224	30	0	264	607
09:30 AM	29	9	9	0	47	17	262	6	1	286	8	4	4	5	21	8	215	30	0	253	607
09:45 AM	32	9	9	0	50	16	246	14	0	276	3	15	8	2	28	5	228	45	0	278	632
Total	95	25	34	0	154	82	1024	29	4	1139	17	43	29	22	111	34	849	125	0	1008	2412
[BREAK]																					
11:00 AM	50	16	20	0	86	19	314	7	2	342	2	5	8	5	20	6	226	32	0	264	712
11:15 AM	28	8	20	0	56	22	355	7	0	384	2	12	6	5	25	5	272	37	0	314	779
11:30 AM	38	16	23	0	77	16	380	10	0	406	6	4	7	5	22	9	259	46	0	314	819
11:45 AM	48	11	17	0	76	46	379	9	4	438	6	10	5	7	28	15	294	47	0	356	898
Total	164	51	80	0	295	103	1428	33	6	1570	16	31	26	22	95	35	1051	162	0	1248	3208
12:00 PM	55	12	27	0	94	50	391	8	3	452	4	15	10	5	34	17	319	52	0	388	968
12:15 PM	53	9	19	0	81	19	482	14	0	515	2	33	11	4	50	13	302	47	0	362	1008
12:30 PM	38	18	23	0	79	24	398	9	2	433	7	14	8	5	34	8	281	55	0	344	890
12:45 PM	6	13	9	0	28	37	374	12	0	423	6	11	11	6	34	0	50	32	0	82	567
Total	152	52	78	0	282	130	1645	43	5	1823	19	73	40	20	152	38	952	186	0	1176	3433
01:00 PM	42	17	25	0	84	17	387	12	2	418	3	5	2	7	17	5	214	37	0	256	775
01:15 PM	57	9	21	1	88	23	353	6	2	384	2	5	5	1	13	7	297	49	0	353	838
01:30 PM	47	10	11	0	68	19	367	5	0	391	1	5	12	5	23	17	301	47	0	365	847
01:45 PM	51	9	13	0	73	19	370	7	0	396	3	5	9	4	21	12	276	49	0	337	827
Total	197	45	70	1	313	78	1477	30	4	1589	9	20	28	17	74	41	1088	182	0	1311	3287
[BREAK]																					
03:00 PM	42	14	16	0	72	24	381	6	1	412	3	10	17	3	33	12	298	36	0	346	863
03:15 PM	47	13	29	0	89	25	374	13	2	414	3	13	11	7	34	14	288	42	0	344	881
03:30 PM	56	17	26	0	99	27	369	8	1	405	6	13	13	5	37	18	274	43	0	335	876
03:45 PM	40	5	25	0	70	16	374	36	2	428	13	11	15	5	44	12	302	54	0	368	910
Total	185	49	96	0	330	92	1498	63	6	1659	25	47	56	20	148	56	1162	175	0	1393	3530
04:00 PM	58	15	26	0	99	21	412	20	1	454	13	14	18	2	47	15	307	60	0	382	982
04:15 PM	56	11	41	0	108	20	441	13	1	475	9	16	12	2	39	48	266	44	1	359	981
04:30 PM	64	11	25	0	100	27	419	13	1	460	5	18	9	6	38	11	252	71	0	334	932
04:45 PM	41	18	31	0	90	24	398	19	1	442	4	16	18	9	47	13	271	41	0	325	904
Total	219	55	123	0	397	92	1670	65	4	1831	31	64	57	19	171	87	1096	216	1	1400	3799
05:00 PM	54	15	27	0	96	13	414	9	0	436	1	5	9	4	29	20	196	43	0	259	820
05:15 PM	49	18	22	0	89	13	421	23	1	458	10	8	14	14	46	19	264	26	0	309	902
05:30 PM	34	10	20	0	64	21	327	18	1	367	5	10	13	2	30	15	253	27	0	295	756
05:45 PM	23	9	15	0	47	13	270	5	1	289	4	4	8	4	20	14	230	26	0	270	626
Total	160	52	84	0	296	60	1432	55	3	1550	20	31	50	24	125	68	943	122	0	1133	3104
Grand Total	1296	361	608	1	2266	734	11740	379	37	12890	178	414	369	203	1164	444	8701	1437	1	10583	26903
Apprch %	57 2	15 9	26 8	0		5 7	91 1	2 9	0 3		15 3	35 6	31 7	17 4		4 2	82 2	13 6	0		
Total %	4.8	1.3	2.3	0	8.4	2.7	43.6	1.4	0.1	47.9	0.7	1.5	1.4	0.8	4.3	1.7	32.3	5.3	0	39.3	
Cars	1286	354	601	1	2242	721	11474	368	35	12598	174	409	360	197	1140	436	8565	1420	1	10422	26402
% Cars	99 2	98 1	98 8	100	98 9	98 2	97 7	97 1	94 6	97 7	97 8	98 8	97 6	97	97 9	98 2	98 4	98 8	100	98 5	98 1

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File Name : St Mich_Calle Lorca-Friday
Site Code : 00220203
Start Date : 2/3/2006
Page No : 2

Groups Printed- Cars - Trucks

	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St Michael's From West					
	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
Trucks	10	7	7	0	24	13	266	11	2	292	4	5	9	6	24	8	136	17	0	161	501
% Trucks	0 8	1 9	1 2	0	1 1	1 8	2 3	2 9	5 4	2 3	2 2	1 2	2 4	3	2 1	1 8	1 6	1 2	0	1 5	1 9

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	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	18	4	3	0	25	19	227	4	1	251	8	24	15	11	58	13	290	55	0	358	692
08:00 AM	14	6	9	0	29	18	243	10	3	274	9	12	12	7	40	16	229	65	0	310	653
08:15 AM	15	8	2	0	25	14	208	9	0	231	12	15	12	8	47	11	210	32	0	253	556
08:30 AM	12	4	10	0	26	13	242	13	0	268	0	11	7	8	26	10	176	30	0	216	536
Total Volume	59	22	24	0	105	64	920	36	4	1024	29	62	46	34	171	50	905	182	0	1137	2437
% App. Total	56.2	21	22.9	0		6.2	89.8	3.5	0.4		17	36.3	26.9	19.9		4.4	79.6	16	0		
PHF	.819	.688	.600	.000	.905	.842	.947	.692	.333	.934	.604	.646	.767	.773	.737	.781	.780	.700	.000	.794	.880

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File Name : St. Mich_Calle Lorca-Friday
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Start Date : 2/3/2006
Page No : 4

	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	48	11	17	0	76	46	379	9	4	438	6	10	5	7	28	15	294	47	0	356	898
12:00 PM	55	12	27	0	94	50	391	8	3	452	4	15	10	5	34	17	319	52	0	388	968
12:15 PM	53	9	19	0	81	19	482	14	0	515	2	33	11	4	50	13	302	47	0	362	1008
12:30 PM	38	18	23	0	79	24	398	9	2	433	7	14	8	5	34	8	281	55	0	344	890
Total Volume	194	50	86	0	330	139	1650	40	9	1838	19	72	34	21	146	53	1196	201	0	1450	3764
% App. Total	58.8	15.2	26.1	0		7.6	89.8	2.2	0.5		13	49.3	23.3	14.4		3.7	82.5	13.9	0		
PHF	.882	.694	.796	.000	.878	.695	.856	.714	.563	.892	.679	.545	.773	.750	.730	.779	.937	.914	.000	.934	.934

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File Name : St. Mich_Calle Lorca-Friday
Site Code : 00220203
Start Date : 2/3/2006
Page No : 5

	Calle Lorca From North					St. Michael's From East					Calle Lorca From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	40	5	25	0	70	16	374	36	2	428	13	11	15	5	44	12	302	54	0	368	910
04:00 PM	58	15	26	0	99	21	412	20	1	454	13	14	18	2	47	15	307	60	0	382	982
04:15 PM	56	11	41	0	108	20	441	13	1	475	9	16	12	2	39	48	266	44	1	359	981
04:30 PM	64	11	25	0	100	27	419	13	1	460	5	18	9	6	38	11	252	71	0	334	932
Total Volume	218	42	117	0	377	84	1646	82	5	1817	40	59	54	15	168	86	1127	229	1	1443	3805
% App. Total	57.8	11.1	31	0		4.6	90.6	4.5	0.3		23.8	35.1	32.1	8.9		6	78.1	15.9	0.1		
PHF	.852	.700	.713	.000	.873	.778	.933	.569	.625	.956	.769	.819	.750	.625	.894	.448	.918	.806	.250	.944	.969

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Weather: Fair
Counted by: VR
Board #: 0787
Other:St Michaels and Llano

File Name : St Mich_Llano-Weekday
Site Code : 00008888
Start Date : 11/29/2005
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Horace Kia From North					St Michael's Drive From East					Llano Street From South					St Michael's Drive From West					Int. Total
	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	0	64	9	0	73	15	1	14	0	30	9	101	0	0	110	213
07:15 AM	0	0	0	0	0	2	95	23	0	120	41	0	24	0	65	23	144	0	0	167	352
07:30 AM	1	0	0	0	1	0	113	28	0	141	55	0	47	0	102	50	229	1	0	280	524
07:45 AM	1	0	0	0	1	0	184	52	0	236	72	0	60	0	132	75	304	2	0	381	750
Total	2	0	0	0	2	2	456	112	0	570	183	1	145	0	329	157	778	3	0	938	1839
08:00 AM	0	0	0	0	0	0	156	55	0	211	100	2	74	0	176	68	302	1	0	371	758
08:15 AM	0	0	0	0	0	0	170	36	0	206	57	0	41	0	98	23	230	4	0	257	561
08:30 AM	0	0	0	0	0	0	148	26	0	174	31	1	31	0	63	19	213	1	0	233	470
08:45 AM	0	1	0	0	1	0	166	31	0	197	31	0	27	0	58	21	198	1	0	220	476
Total	0	1	0	0	1	0	640	148	0	788	219	3	173	0	395	131	943	7	0	1081	2265
09:00 AM	1	0	1	0	2	1	180	27	0	208	33	1	22	0	56	15	162	3	0	180	446
09:15 AM	0	0	0	0	0	0	190	38	0	228	40	0	30	0	70	20	212	1	0	233	531
09:30 AM	1	0	3	0	4	0	193	39	0	232	30	0	30	0	60	27	211	1	0	239	535
09:45 AM	1	1	0	0	2	0	217	35	0	252	36	0	45	0	81	15	218	5	0	238	573
Total	3	1	4	0	8	1	780	139	0	920	139	1	127	0	267	77	803	10	0	890	2085
Break]																					
11:00 AM	1	0	1	0	2	0	277	52	0	329	39	0	39	0	78	31	185	1	1	218	627
11:15 AM	1	0	0	0	1	0	265	59	0	324	36	0	42	0	78	25	232	0	0	257	660
11:30 AM	1	0	1	0	2	0	260	66	0	326	48	2	41	0	91	38	231	1	0	270	689
11:45 AM	2	1	1	0	4	5	310	71	0	386	44	1	61	0	106	48	240	0	0	288	784
Total	5	1	3	0	9	5	1112	248	0	1365	167	3	183	0	353	142	888	2	1	1033	2760
12:00 PM	1	0	1	0	2	0	326	81	0	407	43	1	46	0	90	33	271	4	0	308	807
12:15 PM	3	0	0	0	3	2	295	78	0	375	61	1	65	0	128	45	301	4	0	350	856
12:30 PM	4	0	0	0	4	0	297	75	0	372	78	0	80	0	158	30	329	1	0	360	894
12:45 PM	3	1	1	0	5	1	256	73	0	330	56	0	57	0	113	41	345	1	0	387	835
Total	11	1	2	0	14	3	1174	307	0	1484	238	3	248	0	489	149	1246	10	0	1405	3392
01:00 PM	0	0	0	0	0	1	283	68	0	352	60	1	74	0	135	42	324	2	0	368	855
01:15 PM	0	0	0	0	0	0	259	50	0	309	53	0	44	0	97	41	288	1	0	330	736
01:30 PM	1	0	0	0	1	0	250	71	0	321	48	0	56	0	104	41	273	1	0	315	741
01:45 PM	1	1	0	0	2	0	247	66	0	313	52	0	44	0	96	34	288	4	0	326	737
Total	2	1	0	0	3	1	1039	255	0	1295	213	1	218	0	432	158	1173	8	0	1339	3069
Break]																					
03:00 PM	3	1	0	0	4	0	261	76	1	338	49	0	60	0	109	53	308	0	0	361	812
03:15 PM	0	0	1	0	1	1	262	94	0	357	45	0	87	0	132	41	272	0	0	313	803
03:30 PM	0	0	1	0	1	0	237	87	0	324	43	0	60	0	103	37	251	5	0	293	721
03:45 PM	1	1	0	0	2	0	290	79	0	369	64	1	96	0	161	43	275	0	0	318	850
Total	4	2	2	0	8	1	1050	336	1	1388	201	1	303	0	505	174	1106	5	0	1285	3186
04:00 PM	1	0	5	0	6	0	223	70	0	293	29	1	68	0	98	33	273	1	0	307	704
04:15 PM	0	0	0	0	0	1	253	84	0	338	52	1	56	0	109	40	257	3	0	300	747
04:30 PM	1	2	1	0	4	0	254	92	0	346	47	0	65	0	112	33	251	0	0	284	746
04:45 PM	1	0	0	0	1	0	250	89	0	339	24	0	75	0	99	36	261	4	0	301	740
Total	3	2	6	0	11	1	980	335	0	1316	152	2	264	0	418	142	1042	8	0	1192	2937
05:00 PM	2	2	1	0	5	0	321	136	0	457	43	2	69	0	114	43	274	3	0	320	896
05:15 PM	2	0	0	0	2	1	290	114	0	405	24	0	65	0	89	37	243	0	0	280	776
05:30 PM	0	0	0	0	0	1	198	105	0	304	28	0	66	0	94	42	189	0	0	231	629
05:45 PM	0	0	0	0	0	0	197	70	0	267	34	1	65	0	100	40	199	2	0	241	608
Total	4	2	1	0	7	2	1006	425	0	1433	129	3	265	0	397	162	905	5	0	1072	2909
Grand Total	34	11	18	0	63	16	8237	2305	1	10559	1641	18	1926	0	3585	1292	8884	58	1	10235	24442
Apprch %	54	17 5	28 6	0		0 2	78	21 8	0		45 8	0 5	53 7	0		12 6	86 8	0 6	0		
Total %	0.1	0	0.1	0	0.3	0.1	33.7	9 4	0	43.2	6 7	0.1	7.9	0	14.7	5.3	36.3	0.2	0	41.9	
Cars	34	11	18	0	63	16	8189	2296	1	10502	1635	18	1923	0	3576	1290	8836	58	1	10185	24326
% Cars	100	100	100	0	100	100	99 4	99 6	100	99 5	99 6	100	99 8	0	99 7	99 8	99 5	100	100	99 5	99 5

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File Name : St Mich_Llano-Weekday
Site Code : 00008888
Start Date : 11/29/2005
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Groups Printed- Cars - Trucks

	Horace Kia From North					St Michael's Drive From East					Llano Street From South					St Michael's Drive From West					
	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
Trucks	0	0	0	0	0	0	48	9	0	57	6	0	3	0	9	2	48	0	0	50	116
% Trucks	0	0	0	0	0	0	06	04	0	05	04	0	02	0	03	02	05	0	0	05	05

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File Name : St Mich_Llano-Weekday
Site Code : 00008888
Start Date : 11/29/2005
Page No : 3

	Horace Kia From North					St Michael's Drive From East					Llano Street From South					St Michael's Drive From West					
Start Time	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Right	Thru	Left	Other	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	1	0	0	0	1	0	113	28	0	141	55	0	47	0	102	50	229	1	0	280	524
07:45 AM	1	0	0	0	1	0	184	52	0	236	72	0	60	0	132	75	304	2	0	381	750
08:00 AM	0	0	0	0	0	0	156	55	0	211	100	2	74	0	176	68	302	1	0	371	758
08:15 AM	0	0	0	0	0	0	170	36	0	206	57	0	41	0	98	23	230	4	0	257	561
Total Volume	2	0	0	0	2	0	623	171	0	794	284	2	222	0	508	216	1065	8	0	1289	2593
% App Total	100	0	0	0		0	78.5	21.5	0		55.9	0.4	43.7	0		16.8	82.6	0.6	0		
PHF	.500	000	000	.000	.500	000	.846	.777	.000	.841	.710	250	750	.000	.722	.720	.876	.500	.000	.846	.855

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Weather: Fair
Counted by: VR
Board #: 0787
Other: St.Michaels and Llano

File Name : St. Mich_Llano-Weekday
Site Code : 00008888
Start Date : 11/29/2005
Page No : 4

	Horace Kia From North					St Michael's Drive From East					Llano Street From South					St Michael's Drive From West					
Start Time	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	3	0	0	0	3	2	295	78	0	375	61	2	65	0	128	45	301	4	0	350	856
12:30 PM	4	0	0	0	4	0	297	75	0	372	78	0	80	0	158	30	329	1	0	360	894
12:45 PM	3	1	1	0	5	1	256	73	0	330	56	0	57	0	113	41	345	1	0	387	835
01:00 PM	0	0	0	0	0	1	283	68	0	352	60	1	74	0	135	42	324	2	0	368	855
Total Volume	10	1	1	0	12	4	1131	294	0	1429	255	3	276	0	534	158	1299	8	0	1465	3440
% App. Total	83.3	8.3	8.3	0		0.3	79.1	20.6	0		47.8	0.6	51.7	0		10.8	88.7	0.5	0		
PHF	.625	.250	.250	.000	.600	.500	.952	.942	.000	.953	.817	.375	.863	.000	.845	.878	.941	.500	.000	.946	.962

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Weather: Fair
Counted by: VR
Board #: 0787
Other: St Michaels and Llano

File Name : St. Mich_Llano-Weekday
Site Code : 00008888
Start Date : 11/29/2005
Page No : 5

	Horace Kia From North					St Michael's Drive From East					Llano Street From South					St Michael's Drive From West					
Start Time	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Right	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	3	1	0	0	4	0	261	76	1	338	49	0	60	0	109	53	308	0	0	361	812
03:15 PM	0	0	1	0	1	1	262	94	0	357	45	0	87	0	132	41	272	0	0	313	803
03:30 PM	0	0	1	0	1	0	237	87	0	324	43	0	60	0	103	37	251	5	0	293	721
03:45 PM	1	1	0	0	2	0	290	79	0	369	64	1	96	0	161	43	275	0	0	318	850
Total Volume	4	2	2	0	8	1	1050	336	1	1388	201	1	303	0	505	174	1106	5	0	1285	3186
% App. Total	50	25	25	0		0.1	75.6	24.2	0.1		39.8	0.2	60	0		13.5	86.1	0.4	0		
PHF	.333	.500	.500	.000	.500	.250	.905	.894	.250	.940	.785	.250	.789	.000	.784	.821	.898	.250	.000	.890	.937

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Weather Fair
Counted by: M. Roman
Board #: 1143
Other: St. Michaels and Llano Friday

File Name: St Mich_Llano-Friday
Site Code: 00310203
Start Date: 2/3/2006
Page No: 1

Groups Printed- Cars - Trucks

Start Time	Llano From North Right	Thru	Left	Peds	App Total	St. Michael's From East Right	Thru	Left	Peds	App Total	Llano From South Right	Thru	Left	Peds	App Total	St Michael's From West Right	Thru	Left	Peds	App Total	Int Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	0	54	15	0	69	6	0	19	7	32	5	95	0	5	105	206
07:15 AM	0	0	0	0	0	0	98	16	0	114	7	0	24	10	41	14	127	0	1	142	297
07:30 AM	0	0	0	0	0	0	108	27	0	135	5	0	23	8	36	26	201	0	1	228	399
07:45 AM	0	0	0	0	0	0	153	63	0	216	22	0	51	16	89	48	288	0	3	339	644
Total	0	0	0	0	0	0	413	121	0	534	40	0	117	41	198	93	711	0	10	814	1546
08:00 AM	0	0	0	0	0	0	168	55	0	223	40	3	59	20	122	61	224	0	0	285	630
08:15 AM	0	0	0	0	0	0	154	28	0	182	18	0	47	11	76	19	192	0	3	214	472
08:30 AM	0	0	0	0	0	0	130	32	0	162	11	0	28	7	46	14	190	0	0	204	412
08:45 AM	0	0	0	0	0	0	193	36	0	229	17	0	47	9	73	13	196	0	0	209	511
Total	0	0	0	0	0	0	645	151	0	796	86	3	181	47	317	107	802	0	3	912	2025
09:00 AM	0	0	0	0	0	0	173	37	0	210	23	0	36	5	64	18	161	0	0	179	453
09:15 AM	0	0	0	0	0	0	159	39	0	198	10	0	42	8	60	21	176	0	0	197	455
09:30 AM	0	0	0	0	0	0	202	32	0	234	5	0	36	12	53	28	207	0	8	243	530
09:45 AM	0	0	0	0	0	0	209	43	0	252	11	0	33	9	53	20	149	0	4	173	478
Total	0	0	0	0	0	0	743	151	0	894	49	0	147	34	230	87	693	0	12	792	1916
Break]																					
11:00 AM	0	0	0	0	0	0	198	58	0	256	14	0	71	7	92	18	125	0	1	144	492
11:15 AM	0	0	0	0	0	0	270	63	0	333	11	0	43	2	56	22	191	0	0	213	602
11:30 AM	0	0	0	0	0	0	272	52	0	324	16	0	64	4	84	23	108	0	3	134	542
11:45 AM	0	0	0	0	0	0	300	70	0	370	26	0	64	10	100	38	232	0	1	271	741
Total	0	0	0	0	0	0	1040	243	0	1283	67	0	242	23	332	101	656	0	5	762	2377
12:00 PM	0	0	0	0	0	0	334	88	0	422	33	0	79	5	117	23	235	0	0	258	797
12:15 PM	0	0	0	0	0	0	325	88	0	413	44	0	69	7	120	52	265	0	0	317	850
12:30 PM	0	0	0	0	0	0	302	58	0	360	24	0	55	3	82	30	262	0	1	293	735
12:45 PM	0	0	0	0	0	0	285	70	0	355	17	0	82	0	99	19	225	0	0	244	698
Total	0	0	0	0	0	0	1246	304	0	1550	118	0	285	15	418	124	987	0	1	1112	3080
01:00 PM	0	0	0	0	0	0	272	84	0	356	27	0	48	3	78	26	276	0	0	302	736
01:15 PM	0	0	0	0	0	0	268	72	0	340	13	0	67	4	84	9	235	0	0	244	668
01:30 PM	0	0	0	0	0	0	281	67	0	348	31	0	58	9	98	26	274	0	3	303	749
01:45 PM	0	0	0	0	0	0	272	62	0	334	23	0	69	4	96	46	304	0	1	351	781
Total	0	0	0	0	0	0	1093	285	0	1378	94	0	242	20	356	107	1089	0	4	1200	2934
Break]																					
03:00 PM	0	0	0	0	0	0	259	71	0	330	24	0	62	7	93	43	251	0	4	298	721
03:15 PM	0	0	0	0	0	0	281	75	0	356	17	0	68	3	88	42	263	0	11	316	760
03:30 PM	0	0	0	0	0	0	289	72	0	361	35	0	84	9	128	38	279	0	2	319	808
03:45 PM	0	0	0	0	0	0	264	72	0	336	49	0	78	2	129	42	297	1	3	343	808
Total	0	0	0	0	0	0	1093	290	0	1383	125	0	292	21	430	165	1090	1	20	1276	3097
04:00 PM	0	0	0	0	0	0	291	86	0	377	37	0	75	7	119	26	266	0	6	298	794
04:15 PM	0	0	0	0	0	0	320	82	0	402	35	0	73	3	111	37	278	0	2	317	830
04:30 PM	0	0	0	0	0	0	315	73	0	388	40	0	57	4	101	33	220	0	0	253	742
04:45 PM	0	0	0	0	0	0	326	91	0	417	21	0	46	1	68	28	231	0	0	259	744
Total	0	0	0	0	0	0	1252	332	0	1584	133	0	251	15	399	124	995	0	8	1127	3110
05:00 PM	0	0	0	0	0	0	280	89	0	369	17	0	66	1	84	34	269	0	2	305	758
05:15 PM	0	0	0	0	0	0	274	88	0	362	14	0	55	3	72	39	228	0	5	272	706
05:30 PM	0	0	0	0	0	0	152	31	0	183	15	0	24	0	39	6	115	0	0	121	343
05:45 PM	0	0	0	0	0	0	155	42	0	197	19	0	55	0	74	21	74	0	2	97	368
Total	0	0	0	0	0	0	861	250	0	1111	65	0	200	4	269	100	686	0	9	795	2175
Break]																					
Grand Total	0	0	0	0	0	0	8386	2127	0	10513	777	3	1957	220	2957	1008	7709	1	72	8790	22260
Apprch %	0	0	0	0		0	79 8	20 2	0		26 3	0 1	66 2	7 4		11 5	87 7	0	0 8		
Total %	0	0	0	0	0	0	37 7	9.6	0	47.2	3.5	0	8.8	1	13.3	4.5	34.6	0	0.3	39.5	
Cars	0	0	0	0	0	0	8262	2104	0	10366	763	3	1918	218	2902	986	7597	1	70	8654	21922
% Cars	0	0	0	0	0	0	98 5	98 9	0	98 6	98 2	100	98	99 1	98 1	97 8	98 5	100	97 2	98 5	98 5

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Weather:Fair
Counted by: M. Roman
Board #. 1143
Other: St. Michaels and Llano Friday

File Name : St. Mich_Llano-Friday
Site Code : 00310203
Start Date : 2/3/2006
Page No : 2

Groups Printed- Cars - Trucks

	Llano From North					St. Michael's From East					Llano From South					St. Michael's From West					
	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
Trucks	0	0	0	0	0	0	124	23	0	147	14	0	39	2	55	22	112	0	2	136	338
% Trucks	0	0	0	0	0	0	15	11	0	14	18	0	2	09	19	22	15	0	28	15	15

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Weather: Fair
Counted by: M Roman
Board #: 1143
Other: St Michaels and Llano Friday

File Name : St Mich_Llano-Friday
Site Code : 00310203
Start Date : 2/3/2006
Page No : 3

	Llano From North					St. Michael's From East					Llano From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	153	63	0	216	22	0	51	16	89	48	288	0	3	339	644
08:00 AM	0	0	0	0	0	0	168	55	0	223	40	3	59	20	122	61	224	0	0	285	630
08:15 AM	0	0	0	0	0	0	154	28	0	182	18	0	47	11	76	19	192	0	3	214	472
08:30 AM	0	0	0	0	0	0	130	32	0	162	11	0	28	7	46	14	190	0	0	204	412
Total Volume	0	0	0	0	0	0	605	178	0	783	91	3	185	54	333	142	894	0	6	1042	2158
% App. Total	0	0	0	0		0	77.3	22.7	0		27.3	0.9	55.6	16.2		13.6	85.8	0	0.6		
PHF	.000	.000	.000	.000	.000	.000	.900	.706	.000	.878	.569	.250	.784	.675	.682	.582	.776	.000	.500	.768	.838

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Weather: Fair
Counted by: M. Roman
Board #: 1143
Other: St. Michaels and Llano Friday

File Name : St Mich_Llano-Friday
Site Code : 00310203
Start Date : 2/3/2006
Page No : 4

	Llano From North					St. Michael's From East					Llano From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	0	0	0	0	0	300	70	0	370	26	0	64	10	100	38	232	0	1	271	741
12:00 PM	0	0	0	0	0	0	334	88	0	422	33	0	79	5	117	23	235	0	0	258	797
12:15 PM	0	0	0	0	0	0	325	88	0	413	44	0	69	7	120	52	265	0	0	317	850
12:30 PM	0	0	0	0	0	0	302	58	0	360	24	0	55	3	82	30	262	0	1	293	735
Total Volume	0	0	0	0	0	0	1261	304	0	1565	127	0	267	25	419	143	994	0	2	1139	3123
% App. Total	0	0	0	0		0	80.6	19.4	0		30.3	0	63.7	6		12.6	87.3	0	0.2		
PHF	.000	.000	.000	.000	.000	.000	.944	.864	.000	.927	.722	.000	.845	.625	.873	.688	.938	.000	.500	.898	.919

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Weather:Fair
Counted by: M Roman
Board #: 1143
Other: St. Michaels and Llano Friday

File Name : St. Mich_Llar
Site Code : 00310203
Start Date : 2/3/2006
Page No : 5

	Llano From North					St. Michael's From East							
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	L
Peak Hour Analysis From 02:00 PM to 06:00 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:30 PM													
03:30 PM	0	0	0	0	0	0	289	72	0	361	35	0	
03:45 PM	0	0	0	0	0	0	264	72	0	336	49	0	
04:00 PM	0	0	0	0	0	0	291	86	0	377	37	0	
04:15 PM	0	0	0	0	0	0	320	82	0	402	35	0	
Total Volume	0	0	0	0	0	0	1164	312	0	1476	156	0	6
% App Total	0	0	0	0		0	78.9	21.1	0		32	0	6
PHF	.000	.000	.000	.000	.000	.000	.909	.907	.000	.918	.796	.000	.5

Llano From South			St. Michael's From West				
Left	Peds	App Total	Right	Thru	Left	Peds	App T
84	9	128	38	279	0	2	3
78	2	129	42	297	1	3	3
75	7	119	26	266	0	6	2
73	3	111	37	278	0	2	3
310	21	487	143	1120	1	13	12
3.7	4.3		11.2	87.7	0.1	1	
.923	.583	.944	.851	.943	.250	.542	.9

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Weather: Fair
Counted by: MR
Board #: 1144
Other: St. Michael's and Pacheco Weekday

File Name : St. Mich_Pacheco-Weekday
Site Code : 00310216
Start Date : 2/16/2006
Page No : 1

Groups Printed- Cars - Trucks

	Pacheco From North					St. Michael's From East					Pacheco From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	11	19	8	38	20	65	20	5	110	17	30	13	2	62	9	74	27	1	111	321
07:15 AM	9	10	19	10	48	40	124	29	2	195	19	36	12	0	67	12	107	33	0	152	462
07:30 AM	4	17	27	10	58	34	142	38	0	214	16	34	27	2	79	17	176	43	1	237	588
07:45 AM	9	29	19	9	66	39	220	53	2	314	39	73	29	2	143	24	235	60	1	320	843
Total	22	67	84	37	210	133	551	140	9	833	91	173	81	6	351	62	592	163	3	820	2214
08:00 AM	12	29	23	13	77	38	192	79	1	310	21	50	23	0	94	34	207	62	2	305	786
08:15 AM	16	18	29	5	68	29	170	41	4	244	29	45	23	0	97	22	147	50	0	219	628
08:30 AM	19	19	25	14	77	25	168	28	0	221	26	38	30	5	99	15	163	38	2	218	615
08:45 AM	12	18	25	10	65	46	192	37	3	278	27	40	31	0	98	12	157	23	4	196	637
Total	59	84	102	42	287	138	722	185	8	1053	103	173	107	5	388	83	674	173	8	938	2666
09:00 AM	20	26	33	8	87	40	192	33	2	267	17	30	37	0	84	21	144	29	1	195	633
09:15 AM	15	26	33	4	78	24	155	32	3	214	23	50	36	1	110	15	149	39	0	203	605
09:30 AM	14	17	32	14	77	24	182	38	5	249	23	42	32	8	105	16	139	29	3	187	618
09:45 AM	11	24	36	10	81	23	190	42	7	262	30	34	32	4	100	26	147	48	4	225	668
Total	60	93	134	36	323	111	719	145	17	992	93	156	137	13	399	78	579	145	8	810	2524
Break]																					
11:00 AM	7	25	24	16	72	27	197	57	2	283	37	44	40	3	124	24	133	32	5	194	673
11:15 AM	12	30	32	17	91	25	250	63	4	342	34	42	47	4	127	23	156	47	2	228	788
11:30 AM	27	38	19	8	92	26	218	72	2	320	36	43	40	1	120	14	172	46	2	234	766
11:45 AM	26	32	21	14	93	38	301	71	0	410	39	46	52	0	137	20	176	38	3	237	877
Total	72	125	96	55	348	118	966	263	8	1355	146	175	179	8	508	81	637	163	12	893	3104
12:00 PM	46	42	37	16	141	47	316	75	4	442	34	61	62	3	160	25	210	55	6	296	1039
12:15 PM	27	49	35	18	129	37	315	78	5	435	30	45	61	4	140	27	228	64	2	321	1025
12:30 PM	10	38	51	23	122	29	253	77	5	364	37	41	41	5	124	21	162	76	6	265	875
12:45 PM	16	26	39	12	93	33	240	55	0	328	42	39	31	6	118	25	172	25	1	223	762
Total	99	155	162	69	485	146	1124	285	14	1569	143	186	195	18	542	98	772	220	15	1105	3701
01:00 PM	12	44	49	20	125	38	218	54	4	314	36	56	44	5	141	27	251	59	4	341	921
01:15 PM	17	37	31	14	99	28	221	57	4	310	37	43	40	6	126	37	238	61	7	343	878
01:30 PM	24	43	33	17	117	20	215	53	2	290	27	31	57	1	116	22	230	54	8	314	837
01:45 PM	21	34	25	14	94	36	221	52	5	314	24	51	34	5	114	22	218	64	0	304	826
Total	74	158	138	65	435	122	875	216	15	1228	124	181	175	17	497	108	937	238	19	1302	3462
Break]																					
03:00 PM	22	42	43	10	117	24	194	90	3	311	31	39	37	2	109	20	208	54	0	282	819
03:15 PM	21	46	21	6	94	31	272	61	1	365	32	34	35	0	101	27	174	38	2	241	801
03:30 PM	20	44	32	7	103	27	270	61	5	363	45	34	40	0	119	19	182	40	2	243	828
03:45 PM	15	38	30	7	90	25	209	65	5	304	41	46	41	1	129	20	207	47	2	276	799
Total	78	170	126	30	404	107	945	277	14	1343	149	153	153	3	458	86	771	179	6	1042	3247
04:00 PM	1	41	42	13	97	21	220	83	5	329	42	43	41	0	126	24	183	53	1	261	813
04:15 PM	20	37	31	10	98	21	249	75	8	353	47	57	41	3	148	32	167	31	1	231	830
04:30 PM	32	50	33	0	115	26	235	66	2	329	58	44	42	3	147	27	213	43	1	284	875
04:45 PM	9	48	33	16	106	16	201	57	4	278	38	37	44	2	121	16	195	33	4	248	753
Total	62	176	139	39	416	84	905	281	19	1289	185	181	168	8	542	99	758	160	7	1024	3271
05:00 PM	26	53	40	4	123	22	268	79	1	370	31	25	49	1	106	18	273	36	1	328	927
05:15 PM	12	43	36	4	95	26	300	73	1	400	33	33	41	0	107	35	227	31	0	293	895
05:30 PM	19	47	35	19	120	20	219	56	2	297	30	37	41	0	108	19	234	28	3	284	809
05:45 PM	14	36	38	15	103	11	164	45	3	223	35	27	29	0	91	22	172	22	1	217	634
Total	71	179	149	42	441	79	951	253	7	1290	129	122	160	1	412	94	906	117	5	1122	3265
Grand Total	597	1207	1130	415	3349	1038	7758	2045	111	10952	1163	1500	1355	79	4097	789	6626	1558	83	9056	27454
Apprch %	17.8	36	33.7	12.4		9.5	70.8	18.7	1		28.4	36.6	33.1	1.9		8.7	73.2	17.2	0.9		
Total %	2.2	4.4	4.1	1.5	12.2	3.8	28.3	7.4	0.4	39.9	4.2	5.5	4.9	0.3	14.9	2.9	24.1	5.7	0.3	33	
Cars	587	1188	1102	404	3281	1020	7661	2025	108	10814	1150	1483	1349	79	4061	781	6478	1520	83	8862	27018
% Cars	98.3	98.4	97.5	97.3	98	98.3	98.7	99	97.3	98.7	98.9	98.9	99.6	100	99.1	99	97.8	97.6	100	97.9	98.4

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Groups Printed- Cars - Trucks

	Pacheco From North					St. Michael's From East					Pacheco From South					St Michael's From West					
	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
Trucks	10	19	28	11	68	18	97	20	3	138	13	17	6	0	36	8	148	38	0	194	436
% Trucks	1 7	1 6	2 5	2 7	2	1 7	1 3	1	2 7	1 3	1 1	1 1	0 4	0	0 9	1	2 2	2 4	0	2 1	1 6

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File Name : St. Mich_Pacheco-Weekday
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	Pacheco From North					St. Michael's From East					Pacheco From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	9	29	19	9	66	39	220	53	2	314	39	73	29	2	143	24	235	60	1	320	843
08:00 AM	12	29	23	13	77	38	192	79	1	310	21	50	23	0	94	34	207	62	2	305	786
08:15 AM	16	18	29	5	68	29	170	41	4	244	29	45	23	0	97	22	147	50	0	219	628
08:30 AM	19	19	25	14	77	25	168	28	0	221	26	38	30	5	99	15	163	38	2	218	615
Total Volume	56	95	96	41	288	131	750	201	7	1089	115	206	105	7	433	95	752	210	5	1062	2872
% App. Total	19.4	33	33.3	14.2		12	68.9	18.5	0.6		26.6	47.6	24.2	1.6		8.9	70.8	19.8	0.5		
PHF	.737	.819	.828	.732	.935	.840	.852	.636	.438	.867	.737	.705	.875	.350	.757	.699	.800	.847	.625	.830	.852

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	Pacheco From North					St. Michael's From East					Pacheco From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	26	32	21	14	93	38	301	71	0	410	39	46	52	0	137	20	176	38	3	237	877
12:00 PM	46	42	37	16	141	47	316	75	4	442	34	61	62	3	160	25	210	55	6	296	1039
12:15 PM	27	49	35	18	129	37	315	78	5	435	30	45	61	4	140	27	228	64	2	321	1025
12:30 PM	10	38	51	23	122	29	253	77	5	364	37	41	41	5	124	21	162	76	6	265	875
Total Volume	109	161	144	71	485	151	1185	301	14	1651	140	193	216	12	561	93	776	233	17	1119	3816
% App. Total	22.5	33.2	29.7	14.6		9.1	71.8	18.2	0.8		25	34.4	38.5	2.1		8.3	69.3	20.8	1.5		
PHF	.592	.821	.706	.772	.860	.803	.938	.965	.700	.934	.897	.791	.871	.600	.877	.861	.851	.766	.708	.871	.918

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	Pacheco From North					St. Michael's From East					Pacheco From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**32**	50	33	0	115	**26**	235	66	2	329	**58**	**44**	42	**3**	**147**	27	213	**43**	1	284	875
04:45 PM	9	48	33	**16**	106	16	201	57	**4**	278	38	37	44	2	121	16	195	33	4	248	753
05:00 PM	26	53	40	4	123	22	268	**79**	1	370	31	25	**49**	1	106	18	**273**	36	1	**328**	**927**
05:15 PM	12	43	36	4	95	26	**300**	73	1	**400**	33	33	41	0	107	35	227	31	0	293	895
Total Volume	79	194	142	24	439	90	1004	275	8	1377	160	139	176	6	481	96	908	143	6	1153	3450
% App. Total	18	44.2	32.3	5.5		6.5	72.9	20	0.6		33.3	28.9	36.6	1.2		8.3	78.8	12.4	0.5		
PHF	.617	.915	.888	.375	.892	.865	.837	.870	.500	.861	.690	.790	.898	.500	.818	.686	.832	.831	.375	.879	.930

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Weather: Fair
Counted by: M. Roman
Board #: 1351
Other: St. Michaels and Pacheco

File Name : St. Mich_Pacheco-Friday
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Groups Printed- Cars - Trucks

	Pacheco From North					St. Michael's From East					Pacheco From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	4	8	14	3	29	26	52	17	1	96	13	22	12	0	47	8	81	17	0	106	278
07:15 AM	5	14	17	4	40	18	56	9	6	89	21	31	21	0	73	9	89	20	0	118	320
07:30 AM	6	11	18	10	45	28	119	17	4	168	23	34	23	0	80	16	172	44	0	232	525
07:45 AM	3	8	23	12	46	32	163	45	6	246	19	50	28	0	97	20	216	54	0	290	679
Total	18	41	72	29	160	104	390	88	17	599	76	137	84	0	297	53	558	135	0	746	1802
08:00 AM	10	25	23	11	69	36	195	63	3	297	28	58	32	0	118	26	194	56	0	276	760
08:15 AM	7	17	24	10	58	37	195	44	1	277	34	39	31	0	104	27	162	48	0	237	676
08:30 AM	6	19	21	11	57	42	178	47	3	270	26	42	36	0	104	22	148	41	0	211	642
08:45 AM	7	13	38	19	77	44	212	30	0	286	29	30	38	0	97	18	167	34	0	219	679
Total	30	74	106	51	261	159	780	184	7	1130	117	169	137	0	423	93	671	179	0	943	2757
09:00 AM	16	16	26	14	72	38	173	31	0	242	14	32	34	0	80	12	141	37	0	190	584
09:15 AM	21	22	33	3	79	36	189	55	0	280	26	34	37	0	97	21	141	41	0	203	659
09:30 AM	12	30	17	6	65	37	127	35	0	199	32	51	36	0	119	22	153	41	0	216	599
09:45 AM	19	24	25	2	70	45	169	39	0	253	28	44	49	0	121	30	167	47	0	244	688
Total	68	92	101	25	286	156	658	160	0	974	100	161	156	0	417	85	602	166	0	853	2530
BREAK]																					
11:00 AM	7	32	24	13	76	30	198	56	8	292	54	51	40	0	145	41	165	52	0	258	771
11:15 AM	17	36	25	12	90	25	214	39	2	280	53	46	55	0	154	35	213	63	0	311	835
11:30 AM	15	27	23	21	86	30	238	63	2	333	54	50	63	0	167	31	210	54	0	295	881
11:45 AM	22	50	30	16	118	37	259	55	0	351	52	48	58	0	158	34	197	48	0	279	906
Total	61	145	102	62	370	122	909	213	12	1256	213	195	216	0	624	141	785	217	0	1143	3393
12:00 PM	9	35	15	8	67	13	123	38	0	174	51	46	51	0	148	27	231	60	0	318	707
12:15 PM	24	38	28	12	102	30	308	78	3	419	40	63	67	0	170	24	229	62	0	315	1006
12:30 PM	31	31	35	10	107	36	286	61	0	383	39	50	51	0	140	50	265	58	0	373	1003
12:45 PM	8	23	25	5	61	24	234	57	0	315	41	47	73	0	161	47	253	71	0	371	908
Total	72	127	103	35	337	103	951	234	3	1291	171	206	242	0	619	148	978	251	0	1377	3624
01:00 PM	12	43	31	11	97	35	228	62	4	329	50	64	53	0	167	41	235	65	0	341	934
01:15 PM	19	42	24	15	100	32	235	62	4	333	57	42	61	0	160	33	247	74	0	354	947
01:30 PM	10	36	34	19	99	33	208	63	3	307	48	40	54	0	142	37	261	61	0	359	907
01:45 PM	15	30	39	19	103	31	233	63	1	328	41	38	53	0	132	29	241	55	0	325	888
Total	56	151	128	64	399	131	904	250	12	1297	196	184	221	0	601	140	984	255	0	1379	3676
BREAK]																					
03:00 PM	11	39	22	7	79	26	248	56	1	331	58	33	64	0	155	31	224	54	0	309	874
03:15 PM	14	45	27	26	112	29	280	63	3	375	44	56	46	0	146	40	202	58	0	300	933
03:30 PM	9	49	26	41	125	32	243	63	5	343	46	53	52	0	151	22	228	56	0	306	925
03:45 PM	22	43	39	29	133	27	262	63	4	356	45	44	44	0	133	26	240	48	0	314	936
Total	56	176	114	103	449	114	1033	245	13	1405	193	186	206	0	585	119	894	216	0	1229	3668
04:00 PM	28	49	31	24	132	26	271	63	1	361	56	45	61	0	162	32	219	56	0	307	962
04:15 PM	2	34	30	32	98	32	287	48	2	369	48	47	40	0	135	38	233	36	0	307	909
04:30 PM	9	55	35	35	134	28	263	77	0	368	60	51	66	0	177	30	245	55	0	330	1009
04:45 PM	8	53	30	27	118	18	233	76	0	327	48	51	45	0	144	22	252	44	0	318	907
Total	47	191	126	118	482	104	1054	264	3	1425	212	194	212	0	618	122	949	191	0	1262	3787
05:00 PM	17	38	40	51	146	24	270	87	0	381	52	44	56	0	152	20	221	34	0	275	954
05:15 PM	11	49	44	27	131	23	260	78	0	361	48	36	50	0	134	29	233	37	0	299	925
05:30 PM	7	47	32	13	99	17	211	49	0	277	45	38	33	0	116	16	234	36	0	286	778
05:45 PM	5	36	31	4	76	14	178	48	0	240	38	19	26	0	83	13	180	33	0	226	625
Total	40	170	147	95	452	78	919	262	0	1259	183	137	165	0	485	78	868	140	0	1086	3282
Grand Total	448	1167	999	582	3196	1071	7598	1900	67	10636	1461	1569	1639	0	4669	979	7289	1750	0	10018	28519
Apprch %	14	36 5	31 3	18 2		10 1	71 4	17 9	0 6		31 3	33 6	35 1	0		9 8	72 8	17 5	0		
Total %	1.6	4.1	3.5	2	11.2	3.8	26.6	6.7	0.2	37.3	5.1	5.5	5.7	0	16.4	3.4	25.6	6.1	0	35.1	
Cars	443	1151	977	570	3141	1051	7477	1883	66	10477	1455	1556	1636	0	4657	976	7216	1736	0	9928	28203
% Cars	98 9	98 6	97 8	97 9	98 3	98 1	98 4	99 1	98 5	98 5	99 6	99 8	99 8	0	99 7	99 7	99	99 2	0	99 1	98 9

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Groups Printed- Cars - Trucks

	Pacheco From North					St. Michael's From East					Pacheco From South					St Michael's From West					
	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
Trucks	5	16	22	12	55	20	121	17	1	159	6	3	3	0	12	3	73	14	0	90	316
% Trucks	11	14	22	21	17	19	16	09	15	15	04	02	02	0	03	03	1	08	0	09	11

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	Pacheco From North					St. Michael's From East					Pacheco From South					St Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	3	8	23	12	46	32	163	45	6	246	19	50	28	0	97	20	216	54	0	290	679
08:00 AM	10	25	23	11	69	36	195	63	3	297	28	58	32	0	118	26	194	56	0	276	760
08:15 AM	7	17	24	10	58	37	195	44	1	277	34	39	31	0	104	27	162	48	0	237	676
08:30 AM	6	19	21	11	57	42	178	47	3	270	26	42	36	0	104	22	148	41	0	211	642
Total Volume	26	69	91	44	230	147	731	199	13	1090	107	189	127	0	423	95	720	199	0	1014	2757
% App. Total	11.3	30	39.6	19.1		13.5	67.1	18.3	1.2		25.3	44.7	30	0		9.4	71	19.6	0		
PHF	.650	.690	.948	.917	.833	.875	.937	.790	.542	.918	.787	.815	.882	.000	.896	.880	.833	.888	.000	.874	.907

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	Pacheco From North					St. Michael's From East					Pacheco From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	24	38	28	12	102	30	308	78	3	419	40	63	67	0	170	24	229	62	0	315	1006
12:30 PM	31	31	35	10	107	36	286	61	0	383	39	50	51	0	140	50	265	58	0	373	1003
12:45 PM	8	23	25	5	61	24	234	57	0	315	41	47	73	0	161	47	253	71	0	371	908
01:00 PM	12	43	31	11	97	35	228	62	4	329	50	64	53	0	167	41	235	65	0	341	934
Total Volume	75	135	119	38	367	125	1056	258	7	1446	170	224	244	0	638	162	982	256	0	1400	3851
% App. Total	20.4	36.8	32.4	10.4		8.6	73	17.8	0.5		26.6	35.1	38.2	0		11.6	70.1	18.3	0		
PHF	.605	.785	.850	.792	.857	.868	.857	.827	.438	.863	.850	.875	.836	.000	.938	.810	.926	.901	.000	.938	.957

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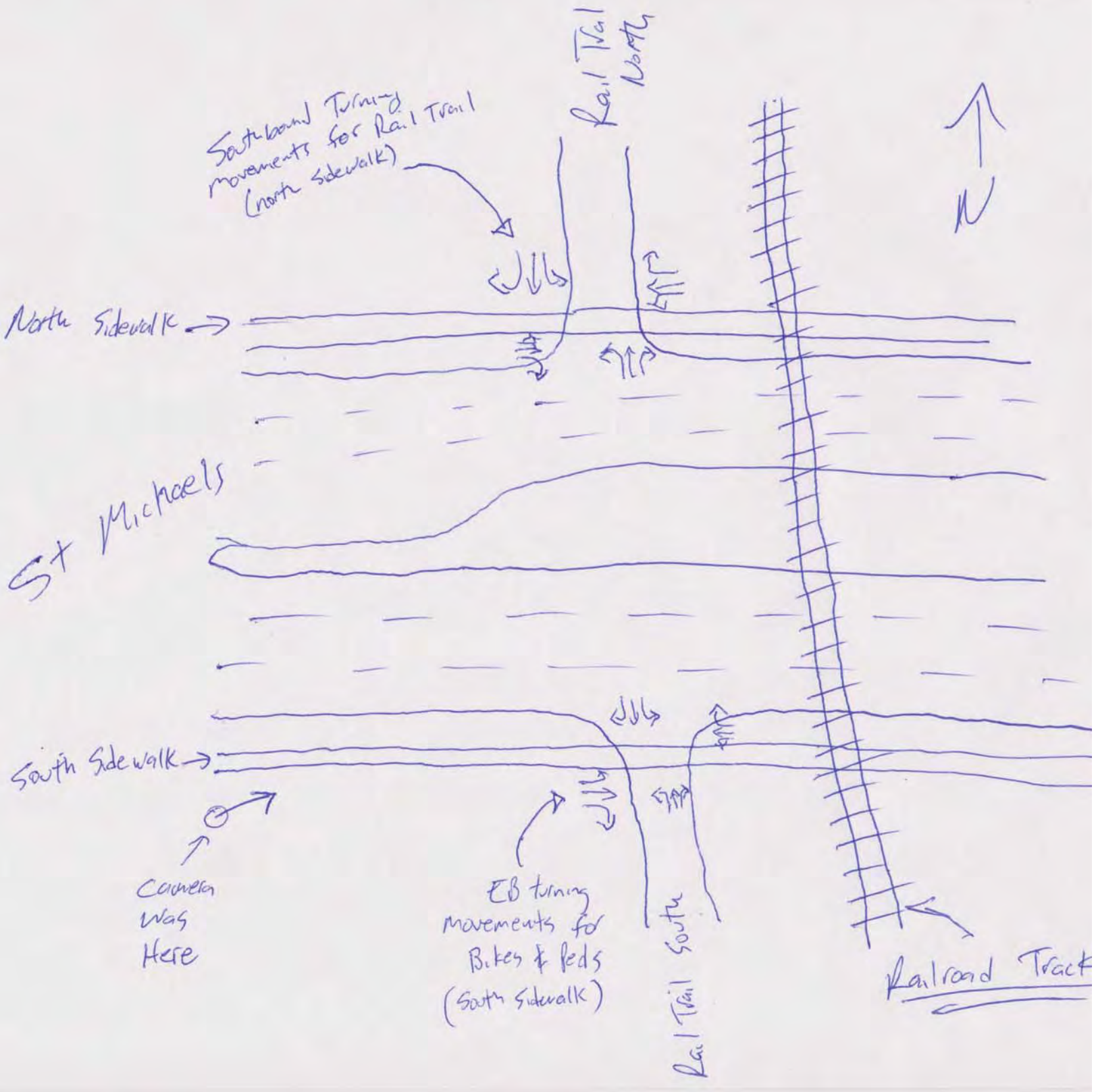
	Pacheco From North					St. Michael's From East					Pacheco From South					St. Michael's From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	22	43	39	29	133	27	262	63	4	356	45	44	44	0	133	26	240	48	0	314	936
04:00 PM	28	49	31	24	132	26	271	63	1	361	56	45	61	0	162	32	219	56	0	307	962
04:15 PM	2	34	30	32	98	32	287	48	2	369	48	47	40	0	135	38	233	36	0	307	909
04:30 PM	9	55	35	35	134	28	263	77	0	368	60	51	66	0	177	30	245	55	0	330	1009
Total Volume	61	181	135	120	497	113	1083	251	7	1454	209	187	211	0	607	126	937	195	0	1258	3816
% App. Total	12.3	36.4	27.2	24.1		7.8	74.5	17.3	0.5		34.4	30.8	34.8	0		10	74.5	15.5	0		
PHF	.545	.823	.865	.857	.927	.883	.943	.815	.438	.985	.871	.917	.799	.000	.857	.829	.956	.871	.000	.953	.945


Southbound Turning movements for Rail Trail (north sidewalk)
Rail Trail North
North Sidewalk
St Michaels
South Sidewalk
Camera Was Here
EB turning movements for Bikes & Peds (South Sidewalk)
Rail Trail South
Railroad Tracks
N

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Collected by: MHC

File Name : St Michaels Rail Trail 10-1-2013 North
Site Code :
Start Date : 10/1/2013
Page No : 1

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
00:00	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	1	1	0	2	0	2	0	0	0	0	0	1	0	1	4
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
05:30	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
05:45	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2	3
Total	1	0	0	1	0	0	1	1	0	3	0	3	1	2	0	3	8
06:00	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	3
06:15	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
06:30	0	0	0	0	0	0	0	0	1	1	1	3	0	6	0	6	9
06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
Total	0	1	0	1	0	1	0	1	1	3	1	5	0	7	1	8	15
07:00	0	0	0	0	0	0	0	0	0	3	0	3	1	0	1	2	5
07:15	0	0	0	0	0	1	0	1	0	4	0	4	0	6	1	7	12
07:30	2	0	0	2	0	0	0	0	0	3	0	3	0	2	1	3	8
07:45	1	0	0	1	0	1	0	1	1	6	0	7	0	3	1	4	13
Total	3	0	0	3	0	2	0	2	1	16	0	17	1	11	4	16	38
08:00	1	0	0	1	0	3	0	3	0	3	0	3	0	3	3	6	13
08:15	0	0	0	0	0	0	0	0	0	3	1	4	0	2	0	2	6
08:30	2	1	0	3	1	0	0	1	0	0	0	0	0	2	0	2	6
08:45	0	0	0	0	0	2	0	2	1	2	0	3	0	1	0	1	6
Total	3	1	0	4	1	5	0	6	1	8	1	10	0	8	3	11	31
09:00	0	0	0	0	1	0	0	1	0	2	0	2	0	3	1	4	7
09:15	0	0	0	0	1	3	0	4	0	2	0	2	0	1	1	2	8
09:30	0	1	0	1	0	0	2	2	0	2	1	3	0	1	2	3	9
09:45	1	1	0	2	0	1	0	1	0	0	1	1	0	4	0	4	8
Total	1	2	0	3	2	4	2	8	0	6	2	8	0	9	4	13	32
10:00	0	0	0	0	0	2	0	2	0	3	0	3	0	0	0	0	5
10:15	1	0	0	1	0	2	1	3	1	2	0	3	1	1	0	2	9
10:30	0	0	0	0	0	1	2	3	0	2	0	2	0	3	1	4	9
10:45	1	0	0	1	0	0	0	0	0	1	0	1	2	4	0	6	8
Total	2	0	0	2	0	5	3	8	1	8	0	9	3	8	1	12	31

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Collected by: MHC

File Name : St Michaels Rail Trail 10-1-2013 North
Site Code :
Start Date : 10/1/2013

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00	0	0	0	0	0	1	0	1	0	2	0	2	0	1	0	1	4
11:15	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
11:30	1	0	1	2	0	1	1	2	0	1	0	1	0	1	2	3	8
11:45	1	0	0	1	0	2	1	3	1	0	0	1	2	4	1	7	12
Total	2	0	1	3	1	4	2	7	1	4	0	5	2	6	3	11	26
12:00	0	0	0	0	0	0	0	0	0	3	0	3	2	2	0	4	7
12:15	0	0	0	0	0	0	0	0	0	2	0	2	0	8	1	9	11
12:30	0	0	0	0	1	1	0	2	0	4	0	4	0	2	0	2	8
12:45	1	0	0	1	0	0	0	0	0	2	0	2	0	2	0	2	5
Total	1	0	0	1	1	1	0	2	0	11	0	11	2	14	1	17	31
13:00	0	0	0	0	1	0	1	2	0	2	0	2	0	2	0	2	6
13:15	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
13:30	1	0	0	1	0	0	0	0	0	1	0	1	0	6	0	6	8
13:45	0	0	1	1	2	0	0	2	0	4	0	4	0	3	2	5	12
Total	1	0	1	2	3	0	1	4	0	8	0	8	0	13	2	15	29
14:00	0	0	1	1	0	0	0	0	0	3	1	4	0	3	0	3	8
14:15	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
14:30	1	1	0	2	0	4	0	4	0	1	0	1	0	0	1	1	8
14:45	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
Total	1	1	1	3	0	5	0	5	0	5	1	6	0	4	2	6	20
15:00	0	0	0	0	0	0	0	0	0	4	0	4	0	3	1	4	8
15:15	1	0	0	1	0	0	4	4	0	2	0	2	0	0	0	0	7
15:30	0	1	0	1	0	1	1	2	0	1	0	1	3	2	1	6	10
15:45	0	1	0	1	0	0	0	0	0	9	1	10	2	4	1	7	18
Total	1	2	0	3	0	1	5	6	0	16	1	17	5	9	3	17	43
16:00	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	4
16:15	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	2	3
16:30	0	0	0	0	0	0	1	1	0	3	0	3	1	5	0	6	10
16:45	1	0	0	1	1	1	0	2	0	1	1	2	0	4	1	5	10
Total	1	0	0	1	1	2	1	4	0	8	1	9	2	10	1	13	27
17:00	1	1	0	2	0	1	0	1	0	4	0	4	1	11	0	12	19
17:15	0	1	0	1	0	2	1	3	0	5	0	5	0	6	0	6	15
17:30	0	0	0	0	0	1	0	1	0	5	0	5	0	9	1	10	16
17:45	0	0	0	0	0	0	0	0	0	1	2	3	0	5	3	8	11
Total	1	2	0	3	0	4	1	5	0	15	2	17	1	31	4	36	61
18:00	0	0	0	0	0	1	0	1	0	2	0	2	0	5	1	6	9
18:15	1	0	1	2	0	0	0	0	0	4	0	4	0	3	1	4	10
18:30	0	0	0	0	0	0	0	0	0	3	0	3	0	2	0	2	5
18:45	1	1	0	2	0	1	0	1	0	1	0	1	0	7	1	8	12
Total	2	1	1	4	0	2	0	2	0	10	0	10	0	17	3	20	36
19:00	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
19:15	0	0	0	0	0	0	0	0	0	1	1	2	0	2	0	2	4
19:30	0	0	0	0	0	0	2	2	1	0	0	1	0	1	0	1	4
19:45	1	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
Total	1	0	0	1	0	0	2	2	1	5	1	7	0	5	0	5	15
20:00	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
20:15	1	0	0	1	0	0	0	0	0	1	0	1	0	1	1	2	4
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
20:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	1	2	0	3	0	1	0	1	0	1	0	1	0	1	2	3	8
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:15	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
21:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	0	0	1	1	0	0	1	1	3

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Collected by: MHC

File Name : St Michaels Rail Trail 10-1-2013 North
Site Code :
Start Date : 10/1/2013
Page No : 3

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
22:00	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
22:15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
22:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	0	2	2	0	1	0	1	5
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	22	16	5	43	9	40	18	67	6	128	13	147	17	158	36	211	468
Apprch %	51.2	37.2	11.6		13.4	59.7	26.9		4.1	87.1	8.8		8.1	74.9	17.1		
Total %	4.7	3.4	1.1	9.2	1.9	8.5	3.8	14.3	1.3	27.4	2.8	31.4	3.6	33.8	7.7	45.1	
Bikes	12	1	2	15	6	10	6	22	2	100	4	106	4	105	24	133	276
% Bikes	54.5	6.2	40	34.9	66.7	25	33.3	32.8	33.3	78.1	30.8	72.1	23.5	66.5	66.7	63	59
Peds	10	15	3	28	3	30	12	45	4	28	9	41	13	53	12	78	192
% Peds	45.5	93.8	60	65.1	33.3	75	66.7	67.2	66.7	21.9	69.2	27.9	76.5	33.5	33.3	37	41

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Collected by: MHC

File Name : St Michaels Rail Trail 10-1-2013 South
Site Code :
Start Date : 10/1/2013
Page No : 1

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	2	3
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	2	3
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:00	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
05:15	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	1	0	1	0	1	0	1	0	0	0	0	0	0	2	2	4
Total	0	1	0	1	0	1	0	1	1	3	0	4	0	0	2	2	8
06:00	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
06:15	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
06:30	0	0	0	0	1	0	1	2	0	2	1	3	0	6	0	6	11
06:45	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	1	2	1	4	0	4	2	6	0	7	0	7	17
07:00	0	0	2	2	1	1	0	2	1	3	1	5	0	0	0	0	9
07:15	0	1	0	1	0	0	0	0	1	4	0	5	0	6	0	6	12
07:30	0	0	1	1	0	1	0	1	1	3	0	4	0	2	0	2	8
07:45	2	0	2	4	1	1	1	3	0	3	0	3	0	2	1	3	13
Total	2	1	5	8	2	3	1	6	3	13	1	17	0	10	1	11	42
08:00	0	0	0	0	0	2	0	2	0	3	0	3	0	3	0	3	8
08:15	0	0	0	0	0	2	0	2	1	4	2	7	0	1	1	2	11
08:30	0	1	0	1	2	0	0	2	0	0	1	1	0	3	0	3	7
08:45	1	1	0	2	0	0	1	1	0	1	1	2	0	1	0	1	6
Total	1	2	0	3	2	4	1	7	1	8	4	13	0	8	1	9	32
09:00	0	0	0	0	0	3	0	3	0	2	0	2	0	3	1	4	9
09:15	1	0	0	1	0	1	1	2	0	1	0	1	1	0	1	2	6
09:30	1	1	1	3	0	1	0	1	1	1	1	3	0	1	0	1	8
09:45	1	3	0	4	1	0	0	1	0	0	0	0	0	4	0	4	9
Total	3	4	1	8	1	5	1	7	1	4	1	6	1	8	2	11	32
10:00	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
10:15	0	2	1	3	0	1	1	2	1	3	0	4	0	0	1	1	10
10:30	0	0	0	0	0	1	0	1	2	1	0	3	0	2	1	3	7
10:45	1	4	2	7	0	1	0	1	1	0	2	3	0	4	0	4	15
Total	1	7	3	11	0	3	1	4	4	7	2	13	0	6	2	8	36

Mike Henderson Consulting, LLC
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Collected by: MHC

File Name : St Michaels Rail Trail 10-1-2013 South
Site Code :
Start Date : 10/1/2013
Page No : 2

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00	0	1	0	1	2	2	0	4	0	2	0	2	1	0	1	2	9
11:15	0	1	0	1	0	3	0	3	0	1	0	1	0	0	1	1	6
11:30	0	1	2	3	0	0	0	0	0	1	0	1	0	1	0	1	5
11:45	0	1	0	1	0	1	1	2	4	0	1	5	0	4	0	4	12
Total	0	4	2	6	2	6	1	9	4	4	1	9	1	5	2	8	32
12:00	0	3	2	5	0	2	0	2	0	3	0	3	0	1	1	2	12
12:15	0	3	0	3	0	1	0	1	0	2	2	4	0	8	0	8	16
12:30	0	0	0	0	1	0	0	1	0	3	1	4	0	3	0	3	8
12:45	0	3	0	3	0	1	0	1	2	2	0	4	0	2	0	2	10
Total	0	9	2	11	1	4	0	5	2	10	3	15	0	14	1	15	46
13:00	2	1	0	3	0	1	0	1	0	0	0	0	0	2	0	2	6
13:15	0	2	0	2	0	0	0	0	0	3	0	3	0	2	1	3	8
13:30	0	2	0	2	0	0	0	0	0	1	0	1	2	4	0	6	9
13:45	1	2	0	3	0	0	0	0	0	4	0	4	1	4	0	5	12
Total	3	7	0	10	0	1	0	1	0	8	0	8	3	12	1	16	35
14:00	1	1	0	2	0	3	0	3	0	3	0	3	0	4	0	4	12
14:15	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4
14:30	1	0	1	2	0	1	0	1	0	0	0	0	0	0	0	0	3
14:45	0	1	1	2	0	2	0	2	0	1	0	1	0	1	0	1	6
Total	2	2	2	6	0	10	0	10	0	4	0	4	0	5	0	5	25
15:00	0	1	0	1	2	2	0	4	0	4	3	7	0	2	0	2	14
15:15	0	5	0	5	0	0	0	0	0	1	0	1	1	0	0	1	7
15:30	0	2	0	2	0	0	0	0	0	1	0	1	0	2	0	2	5
15:45	2	1	0	3	0	4	0	4	0	9	0	9	0	4	0	4	20
Total	2	9	0	11	2	6	0	8	0	15	3	18	1	8	0	9	46
16:00	0	2	1	3	0	1	1	2	2	4	0	6	0	0	1	1	12
16:15	0	4	2	6	0	3	0	3	0	0	0	0	1	1	0	2	11
16:30	0	0	0	0	0	1	0	1	1	3	0	4	0	4	0	4	9
16:45	0	1	0	1	2	0	0	2	0	1	0	1	0	4	0	4	8
Total	0	7	3	10	2	5	1	8	3	8	0	11	1	9	1	11	40
17:00	0	2	0	2	0	0	0	0	0	4	2	6	0	10	0	10	18
17:15	0	1	0	1	0	0	0	0	0	5	0	5	2	3	1	6	12
17:30	1	1	0	2	1	0	0	1	0	8	0	8	2	7	0	9	20
17:45	0	2	0	2	0	0	0	0	0	0	0	0	0	4	1	5	7
Total	1	6	0	7	1	0	0	1	0	17	2	19	4	24	2	30	57
18:00	0	0	2	2	0	0	0	0	1	1	0	2	0	5	0	5	9
18:15	0	1	1	2	0	0	0	0	0	6	0	6	1	5	0	6	14
18:30	0	1	2	3	0	3	0	3	0	3	1	4	0	2	0	2	12
18:45	0	0	3	3	0	1	0	1	0	1	0	1	0	7	0	7	12
Total	0	2	8	10	0	4	0	4	1	11	1	13	1	19	0	20	47
19:00	0	3	0	3	0	1	0	1	1	2	1	4	0	2	0	2	10
19:15	1	0	1	2	1	0	0	1	0	0	0	0	0	2	0	2	5
19:30	0	3	0	3	0	3	1	4	0	2	0	2	0	1	0	1	10
19:45	0	0	1	1	0	0	0	0	2	1	0	3	0	0	0	0	4
Total	1	6	2	9	1	4	1	6	3	5	1	9	0	5	0	5	29
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15	0	0	0	0	0	2	0	2	0	1	0	1	0	1	0	1	4
20:30	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
20:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	2	0	2	0	1	0	1	0	1	0	1	6
21:00	0	0	0	0	2	0	0	2	0	0	2	2	0	0	0	0	4
21:15	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
21:30	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	2	0	3	2	0	0	2	0	0	2	2	0	0	0	0	7

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Collected by: MHC

File Name : St Michaels Rail Trail 10-1-2013 South
Site Code :
Start Date : 10/1/2013
Page No : 3

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
22:00	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
22:15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
22:45	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	3	0	0	0	0	0	2	0	2	0	0	1	1	6
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
23:15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
23:30	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	2	0	0	0	0	0	0	0	0	0	0	1	1	3
Grand Total	17	76	30	123	17	61	8	86	23	125	23	171	13	142	17	172	552
Apprch %	13.8	61.8	24.4		19.8	70.9	9.3		13.5	73.1	13.5		7.6	82.6	9.9		
Total %	3.1	13.8	5.4	22.3	3.1	11.1	1.4	15.6	4.2	22.6	4.2	31	2.4	25.7	3.1	31.2	
Bikes	14	12	4	30	2	9	1	12	5	83	2	90	5	96	9	110	242
% Bikes	82.4	15.8	13.3	24.4	11.8	14.8	12.5	14	21.7	66.4	8.7	52.6	38.5	67.6	52.9	64	43.8
Peds	3	64	26	93	15	52	7	74	18	42	21	81	8	46	8	62	310
% Peds	17.6	84.2	86.7	75.6	88.2	85.2	87.5	86	78.3	33.6	91.3	47.4	61.5	32.4	47.1	36	56.2

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Collected by: MHC

File Name : St Michaels Rail Trail 10-2-2013 North
Site Code :
Start Date : 10/2/2013

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
00:00	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
06:00	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
06:15	0	1	0	1	0	0	0	0	1	0	0	1	0	0	1	1	3
06:30	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
06:45	0	1	0	1	0	2	0	2	0	1	1	2	0	2	0	2	7
Total	1	2	0	3	0	4	0	4	1	1	1	3	0	2	1	3	13
07:00	0	1	0	1	0	0	0	0	0	1	0	1	1	0	1	2	4
07:15	0	0	0	0	0	0	0	0	0	3	0	3	0	1	0	1	4
07:30	1	0	0	1	0	0	0	0	1	5	0	6	1	3	1	5	12
07:45	0	0	0	0	0	1	0	1	0	2	0	2	0	6	1	7	10
Total	1	1	0	2	0	1	0	1	1	11	0	12	2	10	3	15	30
08:00	0	0	0	0	0	1	1	2	0	3	0	3	1	2	0	3	8
08:15	0	0	0	0	1	0	0	1	0	1	0	1	0	2	0	2	4
08:30	2	0	0	2	0	1	0	1	0	3	1	4	0	1	0	1	8
08:45	0	1	0	1	1	0	0	1	0	3	0	3	0	0	0	0	5
Total	2	1	0	3	2	2	1	5	0	10	1	11	1	5	0	6	25
09:00	0	2	0	2	0	2	0	2	0	0	0	0	0	6	0	6	10
09:15	0	1	0	1	1	2	0	3	0	1	0	1	0	2	1	3	8
09:30	0	2	0	2	0	0	0	0	1	2	0	3	0	1	0	1	6
09:45	0	0	0	0	0	0	0	0	0	2	0	2	0	5	0	5	7
Total	0	5	0	5	1	4	0	5	1	5	0	6	0	14	1	15	31
10:00	0	0	0	0	0	0	0	0	0	6	0	6	1	1	0	2	8
10:15	0	1	0	1	0	2	2	4	0	1	0	1	3	2	0	5	11
10:30	0	0	0	0	0	1	2	3	0	2	0	2	0	4	1	5	10
10:45	0	0	0	0	0	1	0	1	0	4	0	4	0	5	1	6	11
Total	0	1	0	1	0	4	4	8	0	13	0	13	4	12	2	18	40

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Collected by: MHC

File Name : St Michaels Rail Trail 10-2-2013 North
Site Code :
Start Date : 10/2/2013

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00	1	0	0	1	0	2	0	2	0	2	0	2	0	1	0	1	6
11:15	2	0	0	2	0	1	0	1	1	4	0	5	0	3	0	3	11
11:30	0	0	0	0	0	2	0	2	0	1	0	1	0	2	0	2	5
11:45	0	0	0	0	0	0	0	0	0	8	1	9	1	1	1	3	12
Total	3	0	0	3	0	5	0	5	1	15	1	17	1	7	1	9	34
12:00	1	0	0	1	0	1	0	1	0	2	0	2	1	2	1	4	8
12:15	0	0	0	0	0	0	0	0	0	2	1	3	0	4	0	4	7
12:30	0	0	0	0	0	1	0	1	0	2	0	2	0	2	0	2	5
12:45	0	0	0	0	0	0	1	1	1	3	0	4	1	2	0	3	8
Total	1	0	0	1	0	2	1	3	1	9	1	11	2	10	1	13	28
13:00	1	0	0	1	0	1	1	2	0	3	0	3	0	3	1	4	10
13:15	0	0	0	0	0	1	0	1	0	3	0	3	1	4	1	6	10
13:30	0	0	0	0	0	2	0	2	0	2	0	2	0	1	0	1	5
13:45	0	0	0	0	0	3	0	3	0	1	0	1	0	4	1	5	9
Total	1	0	0	1	0	7	1	8	0	9	0	9	1	12	3	16	34
14:00	0	1	0	1	0	0	0	0	0	1	0	1	0	2	0	2	4
14:15	0	0	0	0	2	2	0	4	0	0	1	1	0	4	1	5	10
14:30	0	0	0	0	0	1	0	1	1	3	0	4	0	3	0	3	8
14:45	0	4	0	4	0	1	0	1	0	0	0	0	0	1	1	2	7
Total	0	5	0	5	2	4	0	6	1	4	1	6	0	10	2	12	29
15:00	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	4	5
15:15	0	2	0	2	0	0	2	2	0	2	0	2	5	3	0	8	14
15:30	2	0	1	3	0	2	0	2	1	1	0	2	3	1	1	5	12
15:45	0	2	0	2	0	0	0	0	0	2	0	2	0	1	0	1	5
Total	2	4	1	7	0	2	2	4	1	6	0	7	8	9	1	18	36
16:00	0	0	0	0	1	0	0	1	0	4	0	4	0	1	1	2	7
16:15	0	1	0	1	0	0	0	0	0	4	0	4	0	1	0	1	6
16:30	1	1	0	2	1	0	0	1	0	6	0	6	0	6	1	7	16
16:45	0	2	0	2	1	0	0	1	0	7	0	7	0	7	0	7	17
Total	1	4	0	5	3	0	0	3	0	21	0	21	0	15	2	17	46
17:00	1	0	1	2	0	0	0	0	0	3	0	3	0	3	0	3	8
17:15	1	0	0	1	0	1	0	1	0	9	0	9	1	3	2	6	17
17:30	0	3	0	3	1	3	0	4	1	6	0	7	1	7	0	8	22
17:45	1	0	0	1	0	0	0	0	0	4	0	4	0	4	1	5	10
Total	3	3	1	7	1	4	0	5	1	22	0	23	2	17	3	22	57
18:00	0	0	0	0	0	0	0	0	0	5	0	5	0	8	0	8	13
18:15	1	1	0	2	0	4	0	4	0	6	0	6	0	8	0	8	20
18:30	0	0	0	0	0	1	0	1	0	4	0	4	0	4	0	4	9
18:45	0	0	1	1	0	0	0	0	0	8	0	8	0	2	0	2	11
Total	1	1	1	3	0	5	0	5	0	23	0	23	0	22	0	22	53
19:00	0	0	0	0	0	1	1	2	0	1	0	1	0	2	0	2	5
19:15	1	0	0	1	0	0	0	0	0	4	0	4	0	2	0	2	7
19:30	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
19:45	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	0	2	3	0	1	1	2	0	6	0	6	0	5	0	5	16
20:00	1	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	3
20:15	0	0	0	0	0	0	0	0	2	0	0	2	0	2	0	2	4
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	5
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	1	0	0	1	0	0	0	0	2	1	0	3	0	7	2	9	13
21:00	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
21:15	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	2	0	2	0	1	0	1	4

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Collected by: MHC

File Name : St Michaels Rail Trail 10-2-2013 North
Site Code :
Start Date : 10/2/2013
Page No : 3

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
22:30	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
22:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	2	0	2	1	4	0	5	7
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	3
Grand Total	19	29	5	53	9	48	10	67	10	160	5	175	22	164	22	208	503
Apprch %	35.8	54.7	9.4		13.4	71.6	14.9		5.7	91.4	2.9		10.6	78.8	10.6		
Total %	3.8	5.8	1	10.5	1.8	9.5	2	13.3	2	31.8	1	34.8	4.4	32.6	4.4	41.4	
Bikes	12	9	1	22	7	19	4	30	2	113	2	117	10	115	19	144	313
% Bikes	63.2	31	20	41.5	77.8	39.6	40	44.8	20	70.6	40	66.9	45.5	70.1	86.4	69.2	62.2
Peds	7	20	4	31	2	29	6	37	8	47	3	58	12	49	3	64	190
% Peds	36.8	69	80	58.5	22.2	60.4	60	55.2	80	29.4	60	33.1	54.5	29.9	13.6	30.8	37.8

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Collected by: MHC

File Name : St Michaels Rail Trail 10-2-2013 South
Site Code :
Start Date : 10/2/2013
Page No : 1

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	0	0	0	0	0	1	0	1	0	2	0	2	0	2	0	2	5
Total	1	0	0	1	0	1	1	2	0	2	0	2	0	2	0	2	7
07:00	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15	0	1	0	1	0	2	1	3	0	4	0	4	0	1	0	1	9
07:30	0	1	1	2	0	0	0	0	1	6	1	8	0	3	0	3	13
07:45	1	1	0	2	0	0	0	0	0	1	0	1	1	6	1	8	11
Total	1	5	2	8	0	2	1	3	1	11	1	13	1	10	1	12	36
08:00	1	1	1	3	0	2	0	2	0	2	0	2	0	2	0	2	9
08:15	1	0	0	1	1	0	0	1	0	0	0	0	0	2	1	3	5
08:30	0	0	1	1	0	1	0	1	0	4	0	4	0	1	0	1	7
08:45	0	1	0	1	0	0	0	0	0	3	0	3	0	1	0	1	5
Total	2	2	2	6	1	3	0	4	0	9	0	9	0	6	1	7	26
09:00	0	2	0	2	0	5	0	5	1	0	2	3	0	1	0	1	11
09:15	0	0	0	0	0	1	0	1	0	1	0	1	0	4	1	5	7
09:30	0	0	0	0	0	0	1	1	0	2	0	2	0	2	0	2	5
09:45	0	0	0	0	0	0	0	0	0	2	0	2	1	5	0	6	8
Total	0	2	0	2	0	6	1	7	1	5	2	8	1	12	1	14	31
10:00	1	0	2	3	0	0	0	0	0	4	0	4	0	1	1	2	9
10:15	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
10:30	0	2	0	2	1	1	0	2	0	2	0	2	1	5	0	6	12
10:45	1	0	0	1	0	2	0	2	0	3	0	3	0	5	1	6	12
Total	2	2	2	6	1	3	0	4	0	11	0	11	1	13	2	16	37

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Collected by: MHC

File Name : St Michaels Rail Trail 10-2-2013 South
Site Code :
Start Date : 10/2/2013

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00	0	2	0	2	0	1	0	1	1	1	0	2	0	1	0	1	6
11:15	0	1	0	1	0	2	3	5	0	4	0	4	0	3	0	3	13
11:30	1	2	1	4	0	2	0	2	0	1	0	1	0	2	0	2	9
11:45	3	0	1	4	0	3	0	3	2	5	0	7	0	1	0	1	15
Total	4	5	2	11	0	8	3	11	3	11	0	14	0	7	0	7	43
12:00	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2	5
12:15	1	2	0	3	0	0	0	0	0	3	0	3	0	4	0	4	10
12:30	0	0	1	1	0	1	0	1	0	2	1	3	0	2	0	2	7
12:45	1	1	0	2	0	0	0	0	0	3	1	4	0	2	0	2	8
Total	3	3	1	7	0	3	0	3	0	8	2	10	0	10	0	10	30
13:00	0	0	0	0	0	3	0	3	0	3	0	3	0	3	0	3	9
13:15	0	4	0	4	1	1	0	2	0	3	0	3	0	4	1	5	14
13:30	0	1	2	3	0	1	0	1	0	2	1	3	0	1	0	1	8
13:45	1	0	0	1	0	0	0	0	2	0	0	2	0	4	0	4	7
Total	1	5	2	8	1	5	0	6	2	8	1	11	0	12	1	13	38
14:00	0	1	0	1	0	2	0	2	0	1	0	1	0	2	0	2	6
14:15	0	0	0	0	0	2	0	2	0	1	0	1	0	2	1	3	6
14:30	1	0	0	1	1	0	0	1	0	3	1	4	0	2	0	2	8
14:45	0	2	2	4	0	0	0	0	0	0	0	0	0	1	0	1	5
Total	1	3	2	6	1	4	0	5	0	5	1	6	0	7	1	8	25
15:00	0	0	0	0	0	2	0	2	0	1	0	1	2	2	0	4	7
15:15	0	1	0	1	0	1	0	1	0	0	2	2	0	3	0	3	7
15:30	0	0	0	0	2	1	0	3	0	4	0	4	0	1	0	1	8
15:45	0	2	0	2	0	0	0	0	0	2	2	4	0	1	0	1	7
Total	0	3	0	3	2	4	0	6	0	7	4	11	2	7	0	9	29
16:00	0	0	0	0	1	0	0	1	0	5	0	5	1	1	0	2	8
16:15	0	1	0	1	0	1	0	1	0	3	0	3	0	1	1	2	7
16:30	2	3	1	6	0	0	0	0	0	4	1	5	0	7	0	7	18
16:45	0	2	0	2	1	1	0	2	0	7	1	8	1	5	1	7	19
Total	2	6	1	9	2	2	0	4	0	19	2	21	2	14	2	18	52
17:00	0	0	0	0	0	0	0	0	0	3	0	3	1	2	1	4	7
17:15	0	0	0	0	0	0	0	0	0	8	0	8	0	3	0	3	11
17:30	0	1	0	1	0	0	0	0	0	6	1	7	1	7	0	8	16
17:45	0	0	3	3	0	0	1	1	0	4	0	4	1	3	0	4	12
Total	0	1	3	4	0	0	1	1	0	21	1	22	3	15	1	19	46
18:00	0	1	2	3	0	0	0	0	2	5	1	8	0	8	0	8	19
18:15	0	1	0	1	0	0	0	0	2	6	1	9	1	7	0	8	18
18:30	0	0	0	0	2	1	0	3	2	4	0	6	0	3	1	4	13
18:45	0	0	2	2	1	0	0	1	0	8	1	9	1	2	0	3	15
Total	0	2	4	6	3	1	0	4	6	23	3	32	2	20	1	23	65
19:00	0	3	1	4	0	3	0	3	0	1	0	1	0	2	0	2	10
19:15	1	4	0	5	0	1	0	1	1	3	0	4	0	2	0	2	12
19:30	1	1	0	2	0	1	0	1	0	0	0	0	0	1	0	1	4
19:45	0	0	0	0	0	1	0	1	1	0	0	1	2	0	0	2	4
Total	2	8	1	11	0	6	0	6	2	4	0	6	2	5	0	7	30
20:00	0	1	0	1	0	1	0	1	0	1	0	1	1	0	0	1	4
20:15	0	0	0	0	0	0	2	2	0	0	0	0	0	2	0	2	4
20:30	0	0	0	0	0	1	0	1	0	0	0	0	0	5	0	5	6
20:45	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	1	2	0	2	2	4	0	1	0	1	1	7	0	8	15
21:00	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
21:15	2	0	0	2	0	1	0	1	0	0	0	0	0	0	0	0	3
21:30	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	2	0	4	1	2	0	3	0	0	0	0	0	1	0	1	8

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Collected by: MHC

File Name : St Michaels Rail Trail 10-2-2013 South
Site Code :
Start Date : 10/2/2013
Page No : 3

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	3
22:30	0	0	0	0	0	0	0	0	0	2	0	2	0	0	2	2	4
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	2	0	2	0	2	2	4	7
23:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
Grand Total	21	51	23	95	12	52	9	73	15	147	17	179	16	151	13	180	527
Apprch %	22.1	53.7	24.2		16.4	71.2	12.3		8.4	82.1	9.5		8.9	83.9	7.2		
Total %	4	9.7	4.4	18	2.3	9.9	1.7	13.9	2.8	27.9	3.2	34	3	28.7	2.5	34.2	
Bikes	17	14	6	37	1	12	0	13	3	102	3	108	9	122	10	141	299
% Bikes	81	27.5	26.1	38.9	8.3	23.1	0	17.8	20	69.4	17.6	60.3	56.2	80.8	76.9	78.3	56.7
Peds	4	37	17	58	11	40	9	60	12	45	14	71	7	29	3	39	228
% Peds	19	72.5	73.9	61.1	91.7	76.9	100	82.2	80	30.6	82.4	39.7	43.8	19.2	23.1	21.7	43.3

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Collected by: MHC

File Name : St Michaels Rail Trail 10-3-2013 North
Site Code :
Start Date : 10/3/2013
Page No : 1

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	1	1	2	0	0	0	0	0	0	1	1	3
Total	0	0	0	0	0	1	1	2	0	0	0	0	0	0	1	1	3
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
06:15	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	2
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
06:45	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	3
Total	0	1	0	1	0	2	0	2	1	1	0	2	0	1	2	3	8
07:00	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
07:15	1	0	0	1	0	0	0	0	0	2	0	2	0	1	0	1	4
07:30	3	0	0	3	0	0	0	0	0	2	0	2	0	3	0	3	8
07:45	3	0	0	3	0	0	0	0	0	3	0	3	1	8	0	9	15
Total	7	0	0	7	0	0	0	0	0	9	0	9	1	13	0	14	30
08:00	1	0	0	1	1	1	0	2	0	2	0	2	0	4	0	4	9
08:15	0	0	0	0	0	0	0	0	0	2	0	2	0	3	1	4	6
08:30	1	1	0	2	0	1	0	1	0	4	0	4	0	2	0	2	9
08:45	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	1	3
Total	2	1	0	3	1	2	1	4	0	9	0	9	0	10	1	11	27
09:00	0	0	0	0	0	1	0	1	0	3	0	3	2	2	1	5	9
09:15	0	0	0	0	0	0	0	0	0	2	0	2	0	4	1	5	7
09:30	0	0	0	0	0	1	0	1	0	6	0	6	0	5	0	5	12
09:45	0	1	0	1	0	2	0	2	0	4	0	4	0	1	0	1	8
Total	0	1	0	1	0	4	0	4	0	15	0	15	2	12	2	16	36
10:00	0	0	0	0	0	0	1	1	0	0	0	0	1	2	1	4	5
10:15	0	0	0	0	0	1	0	1	0	2	0	2	2	3	1	6	9
10:30	0	0	0	0	0	0	4	4	0	1	0	1	0	1	0	1	6
10:45	0	1	0	1	0	0	0	0	1	2	0	3	2	4	0	6	10
Total	0	1	0	1	0	1	5	6	1	5	0	6	5	10	2	17	30

Mike Henderson Consulting, LLC
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Albuquerque, NM 87111
(505) 275-5706

Collected by: MHC

File Name : St Michaels Rail Trail 10-3-2013 North
Site Code :
Start Date : 10/3/2013

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00	1	0	0	1	0	2	0	2	0	0	0	0	0	1	0	1	4
11:15	0	1	0	1	0	1	0	1	0	4	0	4	4	1	0	5	11
11:30	0	0	0	0	0	0	0	0	1	1	0	2	0	3	0	3	5
11:45	0	0	0	0	0	3	0	3	0	2	0	2	0	2	0	2	7
Total	1	1	0	2	0	6	0	6	1	7	0	8	4	7	0	11	27
12:00	0	0	1	1	1	2	0	3	0	0	0	0	0	2	0	2	6
12:15	2	0	0	2	0	0	0	0	0	6	0	6	0	7	0	7	15
12:30	2	0	0	2	0	0	0	0	0	1	0	1	0	5	0	5	8
12:45	0	0	0	0	0	2	1	3	0	5	0	5	0	4	0	4	12
Total	4	0	1	5	1	4	1	6	0	12	0	12	0	18	0	18	41
13:00	0	0	0	0	0	1	0	1	0	7	0	7	0	2	0	2	10
13:15	0	0	0	0	0	1	0	1	0	1	0	1	0	4	1	5	7
13:30	0	2	0	2	0	0	0	0	0	4	0	4	0	1	0	1	7
13:45	0	0	0	0	0	1	0	1	0	5	0	5	0	2	1	3	9
Total	0	2	0	2	0	3	0	3	0	17	0	17	0	9	2	11	33
14:00	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
14:15	1	1	0	2	0	0	0	0	0	4	0	4	0	3	0	3	9
14:30	0	1	0	1	0	1	0	1	0	4	0	4	0	1	0	1	7
14:45	0	1	0	1	0	0	0	0	0	2	0	2	0	1	0	1	4
Total	1	3	0	4	0	2	0	2	0	10	0	10	0	8	0	8	24
15:00	0	0	0	0	1	0	0	1	0	1	0	1	0	3	0	3	5
15:15	0	1	0	1	0	0	0	0	1	1	0	2	0	3	0	3	6
15:30	1	0	0	1	0	0	0	0	0	3	0	3	0	3	0	3	7
15:45	0	3	0	3	0	0	0	0	0	4	0	4	4	2	0	6	13
Total	1	4	0	5	1	0	0	1	1	9	0	10	4	11	0	15	31
16:00	1	0	0	1	0	1	0	1	0	2	1	3	0	3	0	3	8
16:15	0	2	0	2	0	1	0	1	0	3	0	3	0	3	2	5	11
16:30	3	0	0	3	3	2	0	5	0	3	0	3	0	3	0	3	14
16:45	1	2	1	4	0	1	0	1	0	4	0	4	0	3	0	3	12
Total	5	4	1	10	3	5	0	8	0	12	1	13	0	12	2	14	45
17:00	0	0	0	0	0	0	0	0	1	5	0	6	0	6	0	6	12
17:15	0	1	0	1	0	0	0	0	0	5	0	5	0	6	0	6	12
17:30	0	0	0	0	0	2	1	3	0	6	0	6	0	4	1	5	14
17:45	0	0	0	0	0	0	0	0	0	1	0	1	0	6	0	6	7
Total	0	1	0	1	0	2	1	3	1	17	0	18	0	22	1	23	45
18:00	0	2	0	2	0	0	0	0	1	2	1	4	0	4	1	5	11
18:15	0	1	0	1	0	0	0	0	0	1	0	1	0	4	0	4	6
18:30	1	0	0	1	0	0	0	0	0	2	0	2	0	5	1	6	9
18:45	0	0	0	0	0	0	0	0	0	5	0	5	0	3	0	3	8
Total	1	3	0	4	0	0	0	0	1	10	1	12	0	16	2	18	34
19:00	0	0	0	0	0	0	0	0	0	4	0	4	0	1	0	1	5
19:15	0	0	0	0	0	1	0	1	0	1	0	1	0	1	0	1	3
19:30	0	1	0	1	0	0	0	0	0	2	0	2	0	1	3	4	7
19:45	0	1	0	1	0	0	1	1	0	0	0	0	0	2	0	2	4
Total	0	2	0	2	0	1	1	2	0	7	0	7	0	5	3	8	19
20:00	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
20:15	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
20:30	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
20:45	3	0	0	3	0	0	0	0	2	0	0	2	0	1	0	1	6
Total	5	0	0	5	0	0	0	0	2	1	0	3	0	2	0	2	10
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4
21:15	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
21:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
Total	0	1	0	1	0	0	0	0	0	0	1	1	0	4	2	6	8

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Collected by: MHC

File Name : St Michaels Rail Trail 10-3-2013 North
Site Code :
Start Date : 10/3/2013
Page No : 3

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
23:15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	2	0	0	0	0	0	0	0	0	0	2	0	2	4
Grand Total	27	27	3	57	6	34	10	50	8	142	3	153	16	164	20	200	460
Apprch %	47.4	47.4	5.3		12	68	20		5.2	92.8	2		8	82	10		
Total %	5.9	5.9	0.7	12.4	1.3	7.4	2.2	10.9	1.7	30.9	0.7	33.3	3.5	35.7	4.3	43.5	
Bikes	15	12	0	27	0	9	3	12	3	101	1	105	0	106	13	119	263
% Bikes	55.6	44.4	0	47.4	0	26.5	30	24	37.5	71.1	33.3	68.6	0	64.6	65	59.5	57.2
Peds	12	15	3	30	6	25	7	38	5	41	2	48	16	58	7	81	197
% Peds	44.4	55.6	100	52.6	100	73.5	70	76	62.5	28.9	66.7	31.4	100	35.4	35	40.5	42.8

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Collected by: MHC

File Name : St Michaels Rail Trail 10-3-2013 South
Site Code :
Start Date : 10/3/2013
Page No : 1

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	0	0	0	1	0	1	0	1	0	1	0	0	2	2	4
06:00	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
06:15	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
Total	0	1	0	1	0	1	1	2	1	1	0	2	0	1	0	1	6
07:00	0	1	1	2	0	0	0	0	0	2	1	3	0	0	1	1	6
07:15	0	1	0	1	1	0	0	1	0	2	0	2	0	1	0	1	5
07:30	0	0	0	0	0	1	0	1	0	4	1	5	0	3	0	3	9
07:45	0	1	0	1	0	0	0	0	0	3	0	3	0	6	1	7	11
Total	0	3	1	4	1	1	0	2	0	11	2	13	0	10	2	12	31
08:00	1	0	0	1	0	1	0	1	0	1	0	1	1	5	0	6	9
08:15	0	2	0	2	0	4	0	4	0	2	0	2	0	2	0	2	10
08:30	1	1	0	2	0	0	0	0	1	3	1	5	0	2	0	2	9
08:45	0	0	0	0	0	5	0	5	0	1	0	1	0	1	0	1	7
Total	2	3	0	5	0	10	0	10	1	7	1	9	1	10	0	11	35
09:00	1	1	0	2	0	0	0	0	0	2	0	2	1	1	0	2	6
09:15	0	0	0	0	3	2	0	5	0	2	1	3	1	1	2	4	12
09:30	0	0	0	0	1	0	1	2	0	5	0	5	0	5	0	5	12
09:45	0	3	0	3	1	2	0	3	0	4	0	4	0	1	0	1	11
Total	1	4	0	5	5	4	1	10	0	13	1	14	2	8	2	12	41
10:00	0	2	0	2	0	2	0	2	1	0	0	1	1	0	0	1	6
10:15	1	1	0	2	0	0	0	0	1	1	0	2	0	2	2	4	8
10:30	0	0	1	1	0	2	0	2	0	1	0	1	0	1	0	1	5
10:45	0	2	0	2	0	0	0	0	1	3	0	4	0	4	0	4	10
Total	1	5	1	7	0	4	0	4	3	5	0	8	1	7	2	10	29

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Collected by: MHC

File Name : St Michaels Rail Trail 10-3-2013 South
Site Code :
Start Date : 10/3/2013

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00	0	1	1	2	0	0	0	0	0	0	0	0	0	1	0	1	3
11:15	0	0	0	0	0	2	0	2	0	4	0	4	0	1	0	1	7
11:30	0	1	0	1	1	2	2	5	0	0	2	2	0	3	0	3	11
11:45	0	0	1	1	0	5	0	5	0	2	0	2	0	2	0	2	10
Total	0	2	2	4	1	9	2	12	0	6	2	8	0	7	0	7	31
12:00	0	1	0	1	0	3	0	3	0	0	0	0	1	3	0	4	8
12:15	0	4	0	4	0	0	0	0	0	6	1	7	1	6	0	7	18
12:30	0	0	0	0	1	0	0	1	1	1	2	4	1	4	0	5	10
12:45	0	1	0	1	0	3	0	3	0	5	0	5	1	2	0	3	12
Total	0	6	0	6	1	6	0	7	1	12	3	16	4	15	0	19	48
13:00	2	0	0	2	2	0	0	2	0	5	0	5	1	2	0	3	12
13:15	0	0	0	0	0	0	0	0	0	1	1	2	0	3	1	4	6
13:30	0	1	0	1	0	1	0	1	0	4	0	4	0	1	0	1	7
13:45	0	1	0	1	0	3	0	3	0	5	0	5	0	2	0	2	11
Total	2	2	0	4	2	4	0	6	0	15	1	16	1	8	1	10	36
14:00	0	2	0	2	1	1	0	2	0	0	0	0	2	0	1	3	7
14:15	0	2	0	2	0	3	3	6	0	1	1	2	1	2	0	3	13
14:30	0	2	0	2	1	3	0	4	0	4	0	4	0	1	0	1	11
14:45	0	0	0	0	1	1	0	2	0	2	0	2	0	1	0	1	5
Total	0	6	0	6	3	8	3	14	0	7	1	8	3	4	1	8	36
15:00	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	4	5
15:15	0	1	0	1	1	0	2	3	0	0	1	1	1	2	0	3	8
15:30	0	4	0	4	0	1	0	1	0	3	0	3	0	3	0	3	11
15:45	0	1	0	1	0	0	0	0	1	4	0	5	0	2	0	2	8
Total	0	6	0	6	1	1	2	4	1	8	1	10	1	11	0	12	32
16:00	2	0	0	2	1	0	0	1	0	1	0	1	1	2	0	3	7
16:15	0	4	1	5	0	2	0	2	0	3	0	3	0	3	0	3	13
16:30	0	2	0	2	1	0	0	1	0	3	0	3	0	2	3	5	11
16:45	0	1	0	1	0	2	0	2	0	4	1	5	1	3	0	4	12
Total	2	7	1	10	2	4	0	6	0	11	1	12	2	10	3	15	43
17:00	1	0	0	1	0	1	1	2	0	4	0	4	0	6	0	6	13
17:15	0	0	0	0	0	1	0	1	0	3	0	3	3	3	0	6	10
17:30	1	2	0	3	1	3	0	4	0	5	0	5	0	2	2	4	16
17:45	0	1	0	1	0	0	0	0	0	1	0	1	0	3	3	6	8
Total	2	3	0	5	1	5	1	7	0	13	0	13	3	14	5	22	47
18:00	2	1	2	5	0	3	0	3	0	2	0	2	0	3	0	3	13
18:15	0	2	1	3	0	0	0	0	0	1	1	2	1	4	0	5	10
18:30	0	3	0	3	0	1	0	1	0	2	0	2	0	4	1	5	11
18:45	2	1	1	4	0	3	0	3	0	6	0	6	0	3	0	3	16
Total	4	7	4	15	0	7	0	7	0	11	1	12	1	14	1	16	50
19:00	0	3	0	3	0	0	0	0	0	2	1	3	0	1	0	1	7
19:15	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	4
19:30	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
19:45	0	3	0	3	0	0	0	0	0	0	0	0	1	2	0	3	6
Total	0	7	0	7	0	1	0	1	0	5	1	6	1	5	0	6	20
20:00	0	1	0	1	0	0	0	0	0	0	2	2	0	0	0	0	3
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	1	0	1	0	0	1	1	0	0	1	1	0	1	0	1	4
20:45	0	0	1	1	0	0	2	2	1	0	0	1	0	1	0	1	5
Total	0	2	1	3	0	0	3	3	1	0	3	4	0	2	0	2	12
21:00	0	2	0	2	0	0	0	0	0	0	0	0	4	0	0	4	6
21:15	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
21:30	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
21:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	3	0	4	1	1	0	2	0	0	0	0	4	0	0	4	10

Mike Henderson Consulting, LLC
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(505) 275-5706

Collected by: MHC

File Name : St Michaels Rail Trail 10-3-2013 South
Site Code :
Start Date : 10/3/2013
Page No : 3

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
22:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:30	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
23:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	0	0	0	0	2	1	0	3	4
Grand Total	15	69	11	95	18	68	13	99	8	126	18	152	26	127	19	172	518
Apprch %	15.8	72.6	11.6		18.2	68.7	13.1		5.3	82.9	11.8		15.1	73.8	11		
Total %	2.9	13.3	2.1	18.3	3.5	13.1	2.5	19.1	1.5	24.3	3.5	29.3	5	24.5	3.7	33.2	
Bikes	9	10	1	20	8	8	6	22	1	89	4	94	5	91	6	102	238
% Bikes	60	14.5	9.1	21.1	44.4	11.8	46.2	22.2	12.5	70.6	22.2	61.8	19.2	71.7	31.6	59.3	45.9
Peds	6	59	10	75	10	60	7	77	7	37	14	58	21	36	13	70	280
% Peds	40	85.5	90.9	78.9	55.6	88.2	53.8	77.8	87.5	29.4	77.8	38.2	80.8	28.3	68.4	40.7	54.1

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Collected by: MHC

File Name : St Michaels Rail Trail 10-5-2013 North
Site Code :
Start Date : 10/5/2013
Page No : 1

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	1	1	2	0	0	0	0	0	0	1	1	3
Total	0	0	0	0	0	2	1	3	0	0	0	0	0	0	1	1	4
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
06:15	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	2
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
06:45	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
Total	0	0	0	0	0	2	0	2	1	1	0	2	0	1	2	3	7
07:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:30	2	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
07:45	3	0	0	3	0	0	0	0	0	1	0	1	1	5	0	6	10
Total	6	1	0	7	0	0	0	0	0	2	0	2	1	6	0	7	16
08:00	1	0	0	1	1	1	0	2	0	2	0	2	0	3	0	3	8
08:15	0	0	0	0	1	0	0	1	0	2	0	2	0	1	0	1	4
08:30	1	0	0	1	0	2	0	2	0	4	0	4	0	1	0	1	8
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	2	0	0	2	2	3	0	5	0	8	0	8	0	5	1	6	21
09:00	0	0	0	0	0	1	0	1	0	1	0	1	2	2	0	4	6
09:15	0	0	0	0	0	0	0	0	0	2	0	2	0	3	0	3	5
09:30	0	0	0	0	0	1	0	1	0	2	0	2	0	5	0	5	8
09:45	0	0	0	0	0	0	0	0	0	2	0	2	0	4	0	4	6
Total	0	0	0	0	0	2	0	2	0	7	0	7	2	14	0	16	25
10:00	0	0	0	0	0	1	0	1	0	0	0	0	1	2	1	4	5
10:15	0	0	0	0	0	0	0	0	0	4	0	4	2	0	0	2	6
10:30	0	0	0	0	0	0	4	4	0	3	0	3	0	1	0	1	8
10:45	0	1	0	1	0	0	0	0	1	1	0	2	2	1	0	3	6
Total	0	1	0	1	0	1	4	5	1	8	0	9	5	4	1	10	25

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Collected by: MHC

File Name : St Michaels Rail Trail 10-5-2013 North
Site Code :
Start Date : 10/5/2013

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00	1	0	0	1	0	2	0	2	0	1	0	1	0	2	0	2	6
11:15	0	1	0	1	0	0	0	0	0	0	0	0	4	0	0	4	5
11:30	0	2	0	2	0	0	0	0	1	0	0	1	0	1	0	1	4
11:45	0	0	0	0	0	3	0	3	0	1	0	1	0	3	0	3	7
Total	1	3	0	4	0	5	0	5	1	2	0	3	4	6	0	10	22
12:00	0	1	1	2	1	2	0	3	0	0	0	0	0	1	0	1	6
12:15	2	1	0	3	0	0	0	0	0	4	0	4	0	5	0	5	12
12:30	3	2	0	5	0	0	0	0	0	3	0	3	1	3	1	5	13
12:45	0	0	0	0	0	3	1	4	0	2	0	2	0	0	0	0	6
Total	5	4	1	10	1	5	1	7	0	9	0	9	1	9	1	11	37
13:00	0	0	0	0	0	3	0	3	0	1	0	1	0	1	0	1	5
13:15	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
13:30	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
13:45	0	0	0	0	0	1	0	1	0	3	0	3	0	0	0	0	4
Total	0	1	0	1	0	5	0	5	0	5	0	5	0	4	0	4	15
14:00	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
14:15	0	1	0	1	0	1	0	1	0	2	0	2	0	3	0	3	7
14:30	0	0	0	0	0	1	0	1	0	2	0	2	0	0	0	0	3
14:45	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
Total	0	2	0	2	0	2	0	2	0	7	0	7	0	5	0	5	16
15:00	0	1	0	1	1	0	0	1	0	1	0	1	0	5	0	5	8
15:15	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	3	4
15:30	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
15:45	0	2	0	2	0	0	2	2	0	1	0	1	4	1	1	6	11
Total	0	3	0	3	1	0	2	3	0	5	0	5	4	11	1	16	27
16:00	0	0	0	0	0	1	0	1	0	2	0	2	0	1	0	1	4
16:15	0	1	0	1	0	1	0	1	0	2	0	2	0	0	0	0	4
16:30	0	0	0	0	3	2	0	5	0	1	0	1	0	0	0	0	6
16:45	0	2	1	3	0	0	0	0	0	3	0	3	0	1	0	1	7
Total	0	3	1	4	3	4	0	7	0	8	0	8	0	2	0	2	21
17:00	0	0	0	0	0	0	0	0	1	2	0	3	0	3	0	3	6
17:15	0	0	0	0	0	0	0	0	0	1	0	1	0	3	1	4	5
17:30	0	0	0	0	0	2	0	2	0	4	0	4	0	0	0	0	6
17:45	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	1	0	1	0	2	0	2	1	7	0	8	0	7	1	8	19
18:00	0	0	0	0	0	0	0	0	1	0	1	2	0	3	0	3	5
18:15	0	1	1	2	0	1	0	1	0	1	0	1	0	0	0	0	4
18:30	0	0	0	0	0	0	0	0	0	1	0	1	0	3	1	4	5
18:45	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Total	0	3	1	4	0	1	0	1	1	3	1	5	0	6	1	7	17
19:00	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
19:15	0	0	0	0	0	3	0	3	0	0	0	0	0	0	1	1	4
19:30	0	1	0	1	0	0	0	0	0	0	0	0	0	1	2	3	4
19:45	0	1	0	1	0	0	1	1	0	3	0	3	0	0	0	0	5
Total	0	2	0	2	0	3	1	4	0	5	0	5	0	2	3	5	16
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6
20:30	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	6	6	7
21:00	0	0	0	0	0	0	0	0	1	0	0	1	0	4	0	4	5
21:15	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
21:30	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
21:45	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	0	3	0	3	0	0	0	0	1	1	1	3	0	4	0	4	10

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Collected by: MHC

File Name : St Michaels Rail Trail 10-5-2013 North
Site Code :
Start Date : 10/5/2013
Page No : 3

Groups Printed- Bikes - Peds

	North Sidewalk Eastbound				North Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:00	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
23:15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	2	0	0	0	0	0	0	0	0	0	2	0	2	4
Grand Total	14	28	4	46	7	37	9	53	6	81	2	89	17	91	18	126	314
Apprch %	30.4	60.9	8.7		13.2	69.8	17		6.7	91	2.2		13.5	72.2	14.3		
Total %	4.5	8.9	1.3	14.6	2.2	11.8	2.9	16.9	1.9	25.8	0.6	28.3	5.4	29	5.7	40.1	
Bikes	2	13	1	16	1	12	2	15	0	29	0	29	1	33	11	45	105
% Bikes	14.3	46.4	25	34.8	14.3	32.4	22.2	28.3	0	35.8	0	32.6	5.9	36.3	61.1	35.7	33.4
Peds	12	15	3	30	6	25	7	38	6	52	2	60	16	58	7	81	209
% Peds	85.7	53.6	75	65.2	85.7	67.6	77.8	71.7	100	64.2	100	67.4	94.1	63.7	38.9	64.3	66.6

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Collected by: MHC

File Name : St Michaels Rail Trail 10-5-2013 South
Site Code :
Start Date : 10/5/2013
Page No : 1

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
Total	0	0	0	0	0	0	1	1	0	1	0	1	0	2	0	2	4
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
06:15	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	1	0	1	2	0	1	0	1	0	0	0	0	0	0	0	0	3
Total	2	0	1	3	0	1	0	1	0	0	0	0	0	1	0	1	5
07:00	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0	3
07:15	0	1	1	2	0	1	0	1	1	0	0	1	0	0	0	0	4
07:30	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:45	0	1	0	1	0	0	0	0	0	1	0	1	0	5	0	5	7
Total	0	2	2	4	0	2	0	2	2	2	0	4	0	6	0	6	16
08:00	0	0	0	0	0	0	0	0	0	2	0	2	0	4	0	4	6
08:15	0	0	0	0	0	0	0	0	0	2	0	2	1	2	1	4	6
08:30	0	0	0	0	1	0	0	1	0	2	0	2	0	1	1	2	5
08:45	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	2
Total	0	0	0	0	1	0	0	1	0	6	1	7	1	7	3	11	19
09:00	0	0	0	0	0	0	0	0	0	2	1	3	0	1	1	2	5
09:15	0	2	0	2	0	1	0	1	0	3	0	3	1	1	1	3	9
09:30	0	0	0	0	0	1	0	1	0	1	0	1	2	2	0	4	6
09:45	0	1	0	1	0	0	0	0	1	1	0	2	0	3	2	5	8
Total	0	3	0	3	0	2	0	2	1	7	1	9	3	7	4	14	28
10:00	0	0	1	1	0	1	0	1	0	2	0	2	0	1	0	1	5
10:15	0	0	0	0	0	1	0	1	0	3	0	3	0	2	0	2	6
10:30	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	1	3
10:45	0	0	0	0	0	2	0	2	0	2	0	2	0	1	0	1	5
Total	0	0	1	1	0	4	0	4	0	9	0	9	1	4	0	5	19

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Collected by: MHC

File Name : St Michaels Rail Trail 10-5-2013 South
Site Code :
Start Date : 10/5/2013
Page No : 2

Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00	0	1	0	1	0	0	0	0	0	0	0	0	1	2	0	3	4
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	1	1	0	0	0	0	0	1	0	1	0	1	0	1	3
11:45	0	0	0	0	1	0	0	1	1	2	1	4	0	3	0	3	8
Total	0	1	1	2	1	0	0	1	1	3	1	5	1	6	0	7	15
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4
12:15	1	1	0	2	0	1	0	1	0	1	0	1	1	1	0	2	6
12:30	0	0	0	0	1	1	0	2	0	6	0	6	0	2	0	2	10
12:45	0	0	0	0	0	0	0	0	0	0	1	1	0	3	0	3	4
Total	1	1	0	2	1	2	0	3	0	7	1	8	1	10	0	11	24
13:00	0	1	0	1	0	2	0	2	0	1	0	1	0	3	0	3	7
13:15	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
13:30	0	3	0	3	0	0	0	0	0	0	0	0	0	2	0	2	5
13:45	0	1	0	1	1	1	0	2	0	1	0	1	0	1	0	1	5
Total	0	5	0	5	1	4	0	5	0	3	0	3	0	6	0	6	19
14:00	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
14:15	0	0	0	0	1	1	0	2	0	1	0	1	0	2	0	2	5
14:30	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
14:45	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	2	3
Total	0	3	0	3	1	1	0	2	0	5	0	5	1	3	0	4	14
15:00	1	0	0	1	0	3	1	4	0	1	0	1	0	5	0	5	11
15:15	0	1	0	1	0	0	0	0	0	1	0	1	0	3	0	3	5
15:30	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
15:45	0	2	0	2	0	0	0	0	0	3	0	3	0	1	0	1	6
Total	1	3	0	4	0	3	1	4	0	7	0	7	0	11	0	11	26
16:00	0	3	0	3	0	0	0	0	0	2	0	2	0	2	0	2	7
16:15	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
16:30	0	0	0	0	1	1	0	2	0	1	1	2	0	2	0	2	6
16:45	0	0	0	0	0	3	1	4	1	3	0	4	0	1	0	1	9
Total	0	3	0	3	1	4	1	6	1	8	1	10	0	5	0	5	24
17:00	0	0	0	0	0	1	0	1	0	6	0	6	0	1	0	1	8
17:15	0	1	1	2	1	1	0	2	0	0	0	0	0	3	0	3	7
17:30	0	1	1	2	0	0	0	0	0	0	2	2	1	0	0	1	5
17:45	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	3	2	5	1	2	0	3	0	6	2	8	1	5	0	6	22
18:00	0	0	0	0	0	0	0	0	0	2	0	2	0	3	0	3	5
18:15	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
18:30	0	1	2	3	0	0	0	0	0	2	0	2	0	0	0	0	5
18:45	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	2	3
Total	0	1	2	3	0	0	0	0	0	5	1	6	1	5	0	6	15
19:00	0	0	0	0	0	1	0	1	0	1	1	2	0	0	0	0	3
19:15	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
19:30	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
19:45	1	1	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Total	1	1	0	2	0	2	0	2	0	4	1	5	0	1	0	1	10
20:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
20:45	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	2	2	0	4	0	0	0	0	1	0	0	1	0	0	0	0	5
21:00	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
21:30	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
21:45	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
Total	0	2	0	2	0	2	1	3	0	0	0	0	0	3	1	4	9

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File Name : St Michaels Rail Trail 10-5-2013 South
Site Code :
Start Date : 10/5/2013
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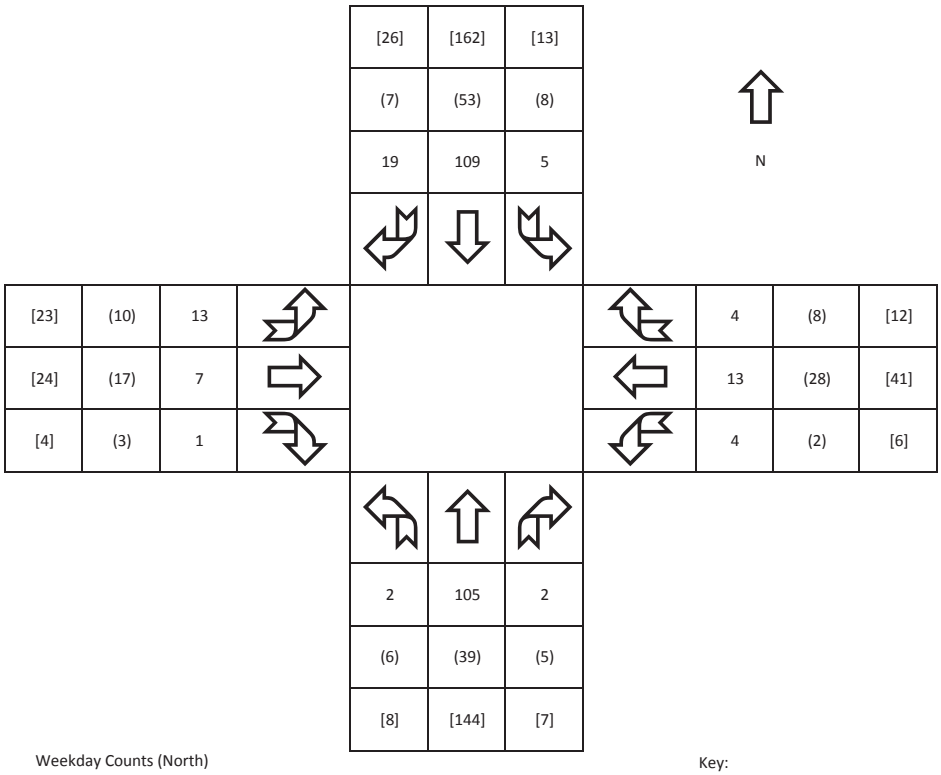
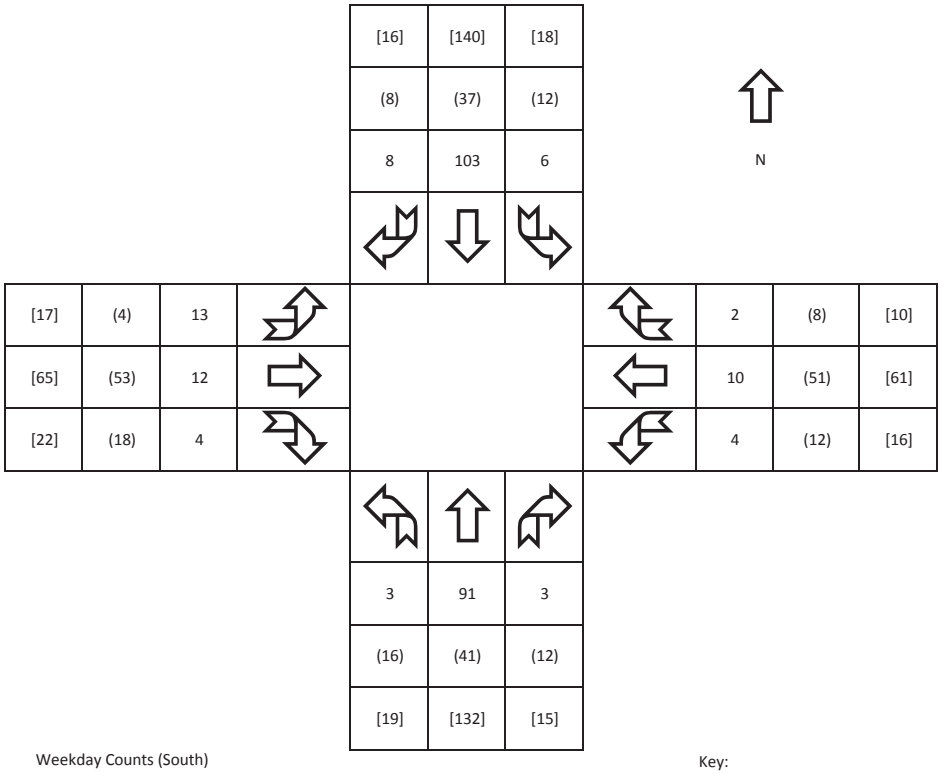
Groups Printed- Bikes - Peds

	South Sidewalk Eastbound				South Sidewalk Westbound				Rail Trail Northbound				Rail Trail Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
22:00	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
22:15	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
22:30	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	5
23:00	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	2	3
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	1	0	1	0	0	0	0	1	2	0	3	5
Grand Total	7	31	9	47	7	34	4	45	6	74	9	89	11	85	8	104	285
Apprch %	14.9	66	19.1		15.6	75.6	8.9		6.7	83.1	10.1		10.6	81.7	7.7		
Total %	2.5	10.9	3.2	16.5	2.5	11.9	1.4	15.8	2.1	26	3.2	31.2	3.9	29.8	2.8	36.5	
Bikes	4	7	2	13	2	9	1	12	0	53	2	55	6	63	5	74	154
% Bikes	57.1	22.6	22.2	27.7	28.6	26.5	25	26.7	0	71.6	22.2	61.8	54.5	74.1	62.5	71.2	54
Peds	3	24	7	34	5	25	3	33	6	21	7	34	5	22	3	30	131
% Peds	42.9	77.4	77.8	72.3	71.4	73.5	75	73.3	100	28.4	77.8	38.2	45.5	25.9	37.5	28.8	46



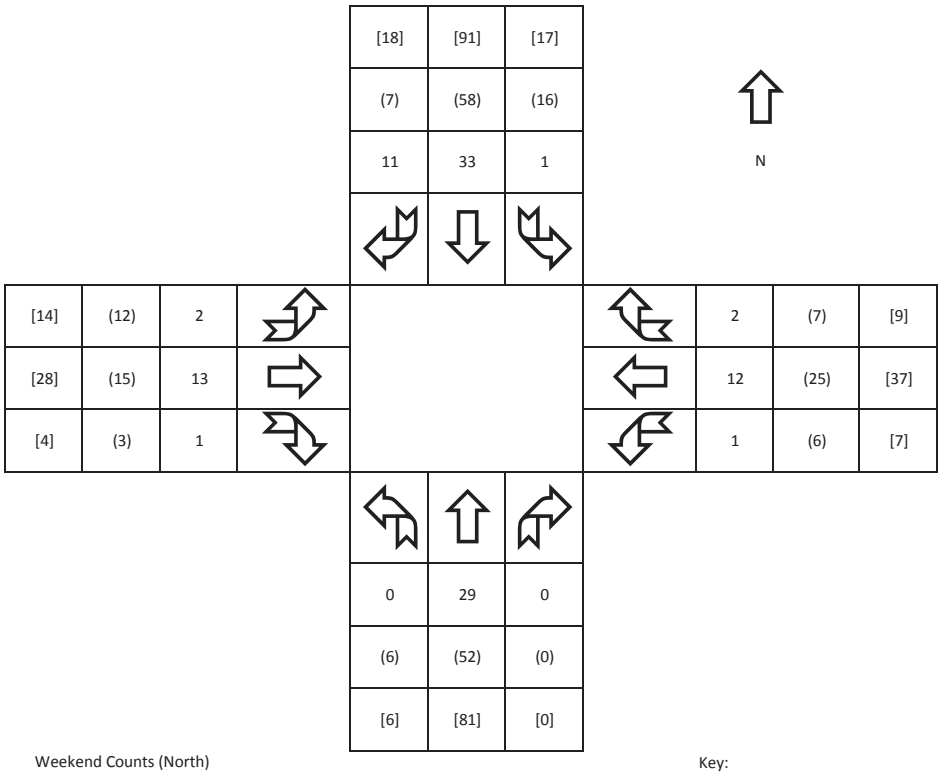
Weekday Counts (North)

Key:
XXX: Bicycle
(YYY): Pedestrian
[ZZZ]: Total



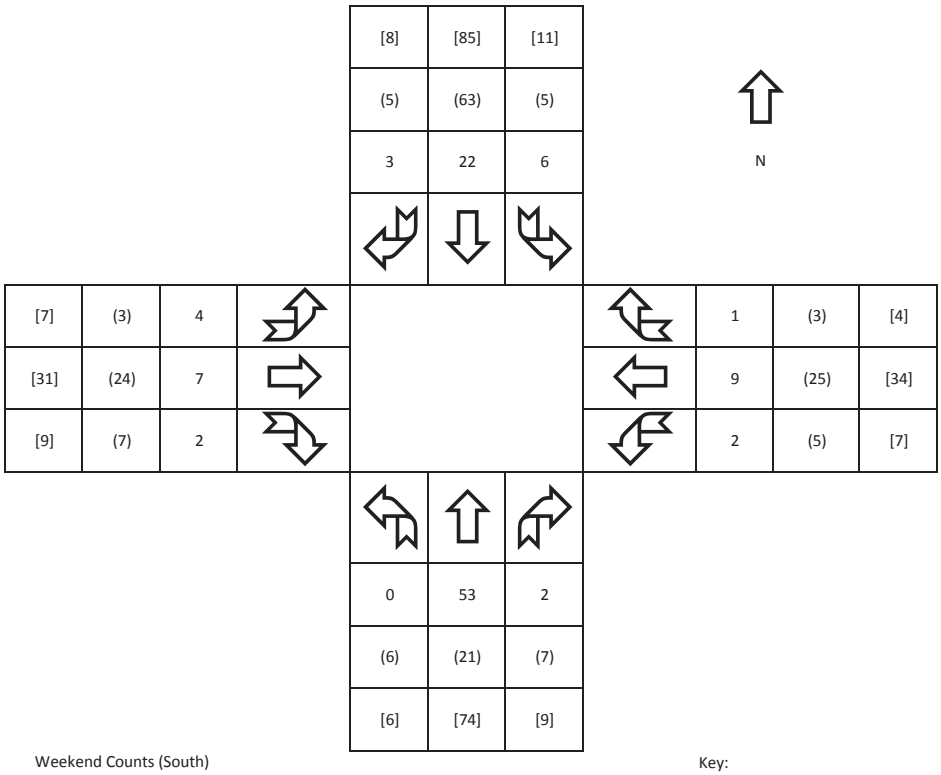
Weekday Counts (South)

Key:
XXX: Bicycle
(YYY): Pedestrian
[ZZZ]: Total



Weekend Counts (North)

Key:
XXX: Bicycle
(YYY): Pedestrian
[ZZZ]: Total



Weekend Counts (South)

Key:
XXX: Bicycle
(YYY): Pedestrian
[ZZZ]: Total

Appendix B

Synchro Output Sheets

Capacity Analysis and Queue Analysis

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	65	1305	108	890	48	71	46	66	99
v/c Ratio	0.12	0.34	0.30	0.23	0.51	0.42	0.24	0.56	0.56
Control Delay	2.4	5.2	4.4	5.0	73.4	61.9	15.6	73.5	58.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.4	5.2	4.4	5.0	73.4	61.9	15.6	73.5	58.3
Queue Length 50th (ft)	6	103	11	71	39	58	0	54	68
Queue Length 95th (ft)	m16	137	27	104	79	104	34	100	123
Internal Link Dist (ft)		877		1116		143			427
Turn Bay Length (ft)	185		220		80			50	
Base Capacity (vph)	553	3796	381	3868	274	494	456	341	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.34	0.28	0.23	0.18	0.14	0.10	0.19	0.20

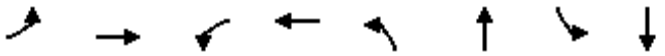
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	1143	58	99	769	50	44	65	42	61	64	27
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	65	1242	63	108	836	54	48	71	46	66	70	29
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	3684	187	430	3575	230	137	215	182	157	144	60
Arrive On Green	0.10	1.00	1.00	0.04	0.73	0.73	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1774	4957	251	1774	4883	314	1291	1863	1583	1270	1252	519
Grp Volume(v), veh/h	65	849	456	108	580	310	48	71	46	66	0	99
Grp Sat Flow(s),veh/h/ln	1774	1695	1818	1774	1695	1807	1291	1863	1583	1270	0	1771
Q Serve(g_s), s	1.1	0.0	0.0	1.9	7.2	7.2	4.7	4.6	3.4	6.6	0.0	6.8
Cycle Q Clear(g_c), s	1.1	0.0	0.0	1.9	7.2	7.2	11.5	4.6	3.4	11.1	0.0	6.8
Prop In Lane	1.00		0.14	1.00		0.17	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	563	2520	1351	430	2482	1323	137	215	182	157	0	204
V/C Ratio(X)	0.12	0.34	0.34	0.25	0.23	0.23	0.35	0.33	0.25	0.42	0.00	0.48
Avail Cap(c_a), veh/h	599	2520	1351	486	2482	1323	330	494	420	348	0	470
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.3	0.0	0.0	3.7	5.6	5.6	59.3	52.9	52.4	58.0	0.0	53.9
Incr Delay (d2), s/veh	0.1	0.3	0.6	0.3	0.2	0.4	1.5	0.9	0.7	1.8	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.2	1.0	3.4	3.7	1.7	2.4	1.5	2.4	0.0	3.4
LnGrp Delay(d),s/veh	3.4	0.3	0.6	4.0	5.8	6.0	60.8	53.8	53.1	59.8	0.0	55.7
LnGrp LOS	A	A	A	A	A	A	E	D	D	E		E
Approach Vol, veh/h		1370			998			165			165	
Approach Delay, s/veh		0.6			5.7			55.6			57.3	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	100.2		19.5	8.9	101.6		19.5
Change Period (Y+Rc), s	4.0	5.0		4.5	4.0	5.0		4.5
Max Green Setting (Gmax), s	9.0	73.0		34.5	9.0	73.0		34.5
Max Q Clear Time (g_c+I1), s	3.1	9.2		13.5	3.9	2.0		13.1
Green Ext Time (p_c), s	0.0	25.8		1.5	0.1	26.6		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	1006	38	1141	33	77	60	53
v/c Ratio	0.25	0.25	0.08	0.29	0.28	0.42	0.57	0.30
Control Delay	3.2	4.6	1.9	3.5	59.8	38.8	76.3	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.2	4.6	1.9	3.5	59.8	38.8	76.3	28.6
Queue Length 50th (ft)	10	80	3	68	27	34	49	14
Queue Length 95th (ft)	25	114	m8	87	59	82	94	54
Internal Link Dist (ft)		484		1171		287		278
Turn Bay Length (ft)	140		200		100		80	
Base Capacity (vph)	509	4043	525	3952	356	484	319	471
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.25	0.07	0.29	0.09	0.16	0.19	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

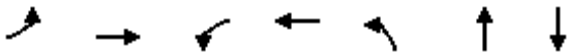
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	888	38	35	971	79	30	37	34	55	17	32
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	105	965	41	38	1055	86	33	40	37	60	18	35
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	511	3686	156	527	3538	288	163	98	90	144	62	120
Arrive On Green	0.05	0.74	0.74	0.11	1.00	1.00	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1774	5003	212	1774	4794	390	1346	892	825	1317	567	1102
Grp Volume(v), veh/h	105	653	353	38	746	395	33	0	77	60	0	53
Grp Sat Flow(s),veh/h/ln	1774	1695	1825	1774	1695	1794	1346	0	1717	1317	0	1668
Q Serve(g_s), s	1.7	8.2	8.2	0.6	0.0	0.0	3.0	0.0	5.4	5.8	0.0	3.8
Cycle Q Clear(g_c), s	1.7	8.2	8.2	0.6	0.0	0.0	6.8	0.0	5.4	11.2	0.0	3.8
Prop In Lane	1.00		0.12	1.00		0.22	1.00		0.48	1.00		0.66
Lane Grp Cap(c), veh/h	511	2498	1345	527	2502	1324	163	0	188	144	0	182
V/C Ratio(X)	0.21	0.26	0.26	0.07	0.30	0.30	0.20	0.00	0.41	0.42	0.00	0.29
Avail Cap(c_a), veh/h	615	2498	1345	561	2502	1324	373	0	456	350	0	443
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.90	0.90	0.90	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.1	5.6	5.6	3.0	0.0	0.0	56.4	0.0	54.0	59.2	0.0	53.3
Incr Delay (d2), s/veh	0.2	0.3	0.5	0.1	0.3	0.5	0.6	0.0	1.4	1.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.9	4.3	0.3	0.1	0.2	1.1	0.0	2.7	2.2	0.0	1.8
LnGrp Delay(d),s/veh	3.3	5.8	6.0	3.1	0.3	0.5	57.0	0.0	55.4	61.1	0.0	54.1
LnGrp LOS	A	A	A	A	A	A	E		E	E		D
Approach Vol, veh/h		1111			1179			110			113	
Approach Delay, s/veh		5.7			0.4			55.9			57.8	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	100.9		18.7	10.5	100.8		18.7
Change Period (Y+Rc), s	3.5	* 5		4.5	3.5	5.0		4.5
Max Green Setting (Gmax), s	14.5	* 70		34.5	9.5	73.0		34.5
Max Q Clear Time (g_c+I1), s	3.7	2.0		8.8	2.6	10.2		13.2
Green Ext Time (p_c), s	0.2	25.0		1.1	0.0	24.5		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.8
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.



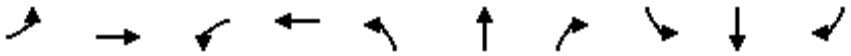
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	9	1393	186	677	241	311	1
v/c Ratio	0.02	0.46	0.63	0.19	0.80	0.65	0.01
Control Delay	13.4	15.1	25.7	1.0	67.9	23.8	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	15.1	25.7	1.0	67.9	23.8	36.0
Queue Length 50th (ft)	3	221	41	5	193	95	1
Queue Length 95th (ft)	12	290	54	13	275	185	6
Internal Link Dist (ft)		375		877		330	113
Turn Bay Length (ft)	130		300				
Base Capacity (vph)	429	3009	300	3610	379	561	117
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.46	0.62	0.19	0.64	0.55	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	1065	216	171	623	0	222	2	284	1	0	0
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	9	1158	235	186	677	0	241	2	309	1	0	0
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	2605	528	331	3571	0	436	2	348	88	0	0
Arrive On Green	0.61	0.61	0.61	0.05	0.70	0.00	0.22	0.22	0.22	0.22	0.00	0.00
Sat Flow, veh/h	759	4241	860	1774	5253	0	1412	10	1575	148	0	0
Grp Volume(v), veh/h	9	926	467	186	677	0	241	0	311	1	0	0
Grp Sat Flow(s),veh/h/ln	759	1695	1711	1774	1695	0	1412	0	1585	148	0	0
Q Serve(g_s), s	0.6	18.8	18.8	4.8	5.9	0.0	0.0	0.0	24.7	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.6	18.8	18.8	4.8	5.9	0.0	15.9	0.0	24.7	24.8	0.0	0.0
Prop In Lane	1.00		0.50	1.00		0.00	1.00		0.99	1.00		0.00
Lane Grp Cap(c), veh/h	522	2082	1051	331	3571	0	436	0	350	88	0	0
V/C Ratio(X)	0.02	0.44	0.44	0.56	0.19	0.00	0.55	0.00	0.89	0.01	0.00	0.00
Avail Cap(c_a), veh/h	522	2082	1051	366	3571	0	505	0	427	139	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.8	13.3	13.3	10.5	6.7	0.0	45.7	0.0	49.1	61.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	1.4	1.5	0.1	0.0	1.1	0.0	17.5	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	8.9	9.2	2.5	2.8	0.0	8.0	0.0	12.5	0.0	0.0	0.0
LnGrp Delay(d),s/veh	9.9	14.0	14.7	12.0	6.8	0.0	46.8	0.0	66.5	61.1	0.0	0.0
LnGrp LOS	A	B	B	B	A		D		E	E		
Approach Vol, veh/h		1402			863			552			1	
Approach Delay, s/veh		14.2			7.9			57.9			61.1	
Approach LOS		B			A			E			E	

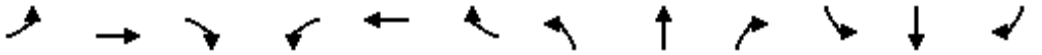
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		96.3		33.7	11.4	84.8		33.7
Change Period (Y+Rc), s		5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s		85.0		35.0	9.5	71.0		35.0
Max Q Clear Time (g_c+I1), s		7.9		26.7	6.8	20.8		26.8
Green Ext Time (p_c), s		26.0		1.9	0.1	22.8		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	1045	218	957	114	224	125	61	103	104
v/c Ratio	0.26	0.38	0.55	0.33	0.38	0.70	0.33	0.28	0.42	0.33
Control Delay	10.0	14.8	14.2	15.2	40.2	62.2	9.5	38.2	55.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	14.8	14.2	15.2	40.2	62.2	9.5	38.2	55.2	9.0
Queue Length 50th (ft)	26	183	63	144	76	182	0	39	80	0
Queue Length 95th (ft)	44	261	116	210	117	254	52	70	130	40
Internal Link Dist (ft)		1171		690		751			705	
Turn Bay Length (ft)	180		400							
Base Capacity (vph)	480	2742	399	2899	318	551	556	223	494	506
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.38	0.55	0.33	0.36	0.41	0.22	0.27	0.21	0.21

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	752	210	201	750	131	105	206	115	56	95	96
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	103	817	228	218	815	142	114	224	125	61	103	104
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	2385	661	491	2673	463	272	284	241	178	244	207
Arrive On Green	0.11	1.00	1.00	0.06	0.61	0.61	0.07	0.15	0.15	0.05	0.13	0.13
Sat Flow, veh/h	1774	3962	1098	1774	4364	755	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	103	698	347	218	632	325	114	224	125	61	103	104
Grp Sat Flow(s),veh/h/ln	1774	1695	1669	1774	1695	1729	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.8	0.0	0.0	6.1	11.5	11.7	7.1	15.1	9.4	3.8	6.6	7.9
Cycle Q Clear(g_c), s	2.8	0.0	0.0	6.1	11.5	11.7	7.1	15.1	9.4	3.8	6.6	7.9
Prop In Lane	1.00		0.66	1.00		0.44	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	2041	1005	491	2077	1059	272	284	241	178	244	207
V/C Ratio(X)	0.23	0.34	0.35	0.44	0.30	0.31	0.42	0.79	0.52	0.34	0.42	0.50
Avail Cap(c_a), veh/h	566	2041	1005	516	2077	1059	326	552	469	216	494	420
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.2	0.0	0.0	8.3	12.0	12.0	44.0	53.1	50.7	46.0	52.0	52.5
Incr Delay (d2), s/veh	0.2	0.4	0.9	0.6	0.4	0.8	1.0	4.9	1.7	1.1	1.2	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.3	3.0	5.5	5.7	3.6	8.2	4.3	1.9	3.5	3.6
LnGrp Delay(d),s/veh	8.5	0.4	0.9	8.9	12.4	12.8	45.0	57.9	52.4	47.1	53.1	54.4
LnGrp LOS	A	A	A	A	B	B	D	E	D	D	D	D
Approach Vol, veh/h		1148			1175			463			268	
Approach Delay, s/veh		1.3			11.8			53.3			52.3	
Approach LOS		A			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	84.6	10.2	24.3	12.2	83.2	13.0	21.5
Change Period (Y+Rc), s	4.0	5.0	4.0	4.5	4.0	5.0	4.0	4.5
Max Green Setting (Gmax), s	15.0	50.0	9.0	38.5	10.0	55.0	13.0	34.5
Max Q Clear Time (g_c+I1), s	4.8	13.7	5.8	17.1	8.1	2.0	9.1	9.9
Green Ext Time (p_c), s	0.1	18.1	0.0	2.8	0.1	21.1	0.1	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	997	28	197	1458	68	88	63	58	123	141	68
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	92	1084	30	214	1585	74	96	68	63	134	153	74
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	3105	86	473	3108	145	176	410	348	294	261	126
Arrive On Green	0.10	1.00	1.00	0.06	0.62	0.62	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	5087	141	1774	4980	232	1149	1863	1583	1254	1187	574
Grp Volume(v), veh/h	92	722	392	214	1079	580	96	68	63	134	0	227
Grp Sat Flow(s),veh/h/ln	1774	1695	1838	1774	1695	1822	1149	1863	1583	1254	0	1761
Q Serve(g_s), s	2.4	0.0	0.0	5.8	22.8	22.8	10.6	3.8	4.2	12.6	0.0	15.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	5.8	22.8	22.8	25.6	3.8	4.2	16.4	0.0	15.0
Prop In Lane	1.00		0.08	1.00		0.13	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	282	2069	1122	473	2116	1137	176	410	348	294	0	388
V/C Ratio(X)	0.33	0.35	0.35	0.45	0.51	0.51	0.55	0.17	0.18	0.46	0.00	0.59
Avail Cap(c_a), veh/h	299	2069	1122	520	2116	1137	197	444	378	313	0	413
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.75	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	7.9	13.5	13.5	56.8	41.0	41.2	47.7	0.0	45.4
Incr Delay (d2), s/veh	0.5	0.4	0.6	0.7	0.8	1.6	2.6	0.2	0.2	1.1	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.1	0.2	2.9	10.9	11.9	3.5	2.0	1.9	4.4	0.0	7.5
LnGrp Delay(d),s/veh	10.2	0.4	0.6	8.6	14.3	15.0	59.5	41.2	41.4	48.8	0.0	47.3
LnGrp LOS	B	A	A	A	B	B	E	D	D	D		D
Approach Vol, veh/h		1206			1873			227			361	
Approach Delay, s/veh		1.2			13.9			49.0			47.8	
Approach LOS		A			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	86.1		33.1	12.5	84.3		33.1
Change Period (Y+Rc), s	4.0	5.0		* 4.5	4.5	* 5		4.5
Max Green Setting (Gmax), s	8.0	78.0		* 31	11.5	* 75		30.5
Max Q Clear Time (g_c+I1), s	4.4	24.8		27.6	7.8	2.0		18.4
Green Ext Time (p_c), s	0.1	34.4		1.0	0.2	41.2		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

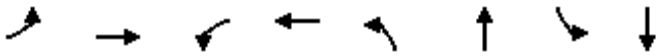
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	92	1114	214	1659	96	68	63	134	227
v/c Ratio	0.38	0.33	0.54	0.49	1.01	0.22	0.20	0.62	0.74
Control Delay	19.4	12.9	10.0	11.6	147.1	45.9	11.1	61.7	61.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	12.9	10.0	11.6	147.1	45.9	11.1	61.7	61.4
Queue Length 50th (ft)	28	91	40	221	~87	50	0	107	172
Queue Length 95th (ft)	m88	212	86	328	#167	87	38	163	240
Internal Link Dist (ft)		877		1116		143			427
Turn Bay Length (ft)	185		220		80			50	
Base Capacity (vph)	249	3332	424	3406	134	444	425	308	428
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.33	0.50	0.49	0.72	0.15	0.15	0.44	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	171	1393	49	1460	53	84	98	188
v/c Ratio	0.54	0.38	0.15	0.42	0.67	0.33	0.60	0.73
Control Delay	9.6	7.8	6.4	22.1	90.1	35.7	67.2	59.5
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	8.0	6.4	22.1	90.1	35.7	67.2	59.5
Queue Length 50th (ft)	25	150	12	380	43	42	79	127
Queue Length 95th (ft)	56	221	m33	479	87	87	132	197
Internal Link Dist (ft)		482		1164		287		278
Turn Bay Length (ft)	140		200		100		80	
Base Capacity (vph)	361	3687	339	3517	144	443	298	444
Starvation Cap Reductn	0	1368	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.60	0.14	0.42	0.37	0.19	0.33	0.42

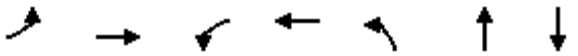
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	157	1227	54	45	1294	49	49	43	34	90	89	84
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	171	1334	59	49	1407	53	53	47	37	98	97	91
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	3407	151	353	3386	128	140	167	132	227	153	144
Arrive On Green	0.05	0.68	0.68	0.03	0.45	0.45	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1774	4993	221	1774	5030	189	1191	967	761	1308	885	831
Grp Volume(v), veh/h	171	906	487	49	948	512	53	0	84	98	0	188
Grp Sat Flow(s),veh/h/ln	1774	1695	1824	1774	1695	1829	1191	0	1728	1308	0	1716
Q Serve(g_s), s	3.8	15.1	15.1	1.0	24.6	24.6	5.6	0.0	5.5	9.1	0.0	13.2
Cycle Q Clear(g_c), s	3.8	15.1	15.1	1.0	24.6	24.6	18.9	0.0	5.5	14.6	0.0	13.2
Prop In Lane	1.00		0.12	1.00		0.10	1.00		0.44	1.00		0.48
Lane Grp Cap(c), veh/h	326	2313	1244	353	2282	1232	140	0	299	227	0	297
V/C Ratio(X)	0.52	0.39	0.39	0.14	0.42	0.42	0.38	0.00	0.28	0.43	0.00	0.63
Avail Cap(c_a), veh/h	401	2313	1244	390	2282	1232	223	0	419	317	0	416
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	9.0	9.0	6.3	18.4	18.4	58.7	0.0	46.7	53.1	0.0	49.9
Incr Delay (d2), s/veh	1.3	0.5	0.9	0.1	0.4	0.8	1.7	0.0	0.5	1.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	7.2	7.9	0.5	11.6	12.7	1.9	0.0	2.7	3.4	0.0	6.5
LnGrp Delay(d),s/veh	11.0	9.4	9.8	6.4	18.9	19.2	60.3	0.0	47.2	54.4	0.0	52.1
LnGrp LOS	B	A	A	A	B	B	E		D	D		D
Approach Vol, veh/h		1564			1509			137			286	
Approach Delay, s/veh		9.7			18.6			52.3			52.9	
Approach LOS		A			B			D			D	

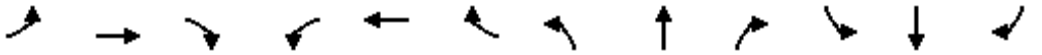
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	92.5		27.0	9.3	93.7		27.0
Change Period (Y+Rc), s	3.5	5.0		4.5	3.5	5.0		4.5
Max Green Setting (Gmax), s	12.5	73.0		31.5	8.5	77.0		31.5
Max Q Clear Time (g_c+I1), s	5.8	26.6		20.9	3.0	17.1		16.6
Green Ext Time (p_c), s	0.2	32.4		1.6	0.0	38.3		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	5	1391	365	1142	329	310	8
v/c Ratio	0.03	0.66	0.87	0.35	0.84	0.47	0.02
Control Delay	30.4	33.9	62.7	6.4	63.1	5.8	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	33.9	62.7	6.4	63.1	5.8	22.7
Queue Length 50th (ft)	3	346	200	71	258	1	2
Queue Length 95th (ft)	13	464	237	81	353	64	14
Internal Link Dist (ft)		293		877		330	113
Turn Bay Length (ft)	130		300				
Base Capacity (vph)	186	2115	493	3278	474	740	559
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.66	0.74	0.35	0.69	0.42	0.01

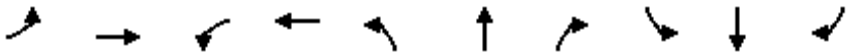
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	1106	174	336	1050	1	303	1	284	2	2	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1202	189	365	1141	1	329	1	309	2	2	4
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	1803	284	388	3068	3	396	2	534	99	104	169
Arrive On Green	0.41	0.41	0.41	0.29	1.00	1.00	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	491	4433	697	1774	5248	5	1404	5	1579	191	308	499
Grp Volume(v), veh/h	5	919	472	365	737	405	329	0	310	8	0	0
Grp Sat Flow(s),veh/h/ln	491	1695	1740	1774	1695	1862	1404	0	1584	999	0	0
Q Serve(g_s), s	0.8	28.7	28.7	16.2	0.0	0.0	21.6	0.0	20.9	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.8	28.7	28.7	16.2	0.0	0.0	42.6	0.0	20.9	21.0	0.0	0.0
Prop In Lane	1.00		0.40	1.00		0.00	1.00		1.00	0.25		0.50
Lane Grp Cap(c), veh/h	255	1379	708	388	1982	1089	396	0	536	373	0	0
V/C Ratio(X)	0.02	0.67	0.67	0.94	0.37	0.37	0.83	0.00	0.58	0.02	0.00	0.00
Avail Cap(c_a), veh/h	255	1379	708	550	1982	1089	396	0	536	373	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.1	31.4	31.4	20.1	0.0	0.0	46.9	0.0	35.4	29.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.6	4.9	17.2	0.4	0.8	13.8	0.0	1.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	13.9	14.7	9.6	0.1	0.2	13.2	0.0	9.4	0.2	0.0	0.0
LnGrp Delay(d),s/veh	23.3	33.9	36.3	37.3	0.4	0.8	60.7	0.0	36.9	29.5	0.0	0.0
LnGrp LOS	C	C	D	D	A	A	E		D	C		
Approach Vol, veh/h		1396			1507			639			8	
Approach Delay, s/veh		34.7			9.5			49.2			29.5	
Approach LOS		C			A			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		81.0		49.0	23.1	57.9		49.0
Change Period (Y+Rc), s		5.0		5.0	4.0	5.0		5.0
Max Green Setting (Gmax), s		76.0		44.0	31.0	41.0		44.0
Max Q Clear Time (g_c+I1), s		2.0		44.6	18.2	30.7		23.0
Green Ext Time (p_c), s		35.6		0.0	0.9	8.8		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	155	1091	299	1189	191	151	174	13	47	39
v/c Ratio	0.41	0.38	0.64	0.37	0.79	0.56	0.46	0.07	0.28	0.16
Control Delay	8.9	20.2	13.5	13.1	70.3	59.0	10.8	39.3	57.0	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	20.2	13.5	13.1	70.3	59.0	10.8	39.3	57.0	1.3
Queue Length 50th (ft)	40	208	63	155	150	116	0	9	39	0
Queue Length 95th (ft)	87	333	150	262	206	186	63	25	72	0
Internal Link Dist (ft)		1164		690		751			705	
Turn Bay Length (ft)	180		400							
Base Capacity (vph)	437	2905	565	3199	241	566	602	210	537	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.38	0.53	0.37	0.79	0.27	0.29	0.06	0.09	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	143	908	96	275	1004	90	176	139	160	12	43	36
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	155	987	104	299	1091	98	191	151	174	13	47	39
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	2946	310	426	3112	279	265	254	216	155	149	126
Arrive On Green	0.02	0.21	0.21	0.08	0.65	0.65	0.08	0.14	0.14	0.02	0.08	0.08
Sat Flow, veh/h	1774	4675	492	1774	4751	426	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	155	715	376	299	778	411	191	151	174	13	47	39
Grp Sat Flow(s),veh/h/ln	1774	1695	1776	1774	1695	1788	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.8	23.3	23.4	7.4	13.4	13.4	10.0	9.9	13.9	0.9	3.1	3.0
Cycle Q Clear(g_c), s	3.8	23.3	23.4	7.4	13.4	13.4	10.0	9.9	13.9	0.9	3.1	3.0
Prop In Lane	1.00		0.28	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	410	2136	1119	426	2221	1171	265	254	216	155	149	126
V/C Ratio(X)	0.38	0.33	0.34	0.70	0.35	0.35	0.72	0.59	0.80	0.08	0.32	0.31
Avail Cap(c_a), veh/h	519	2136	1119	642	2221	1171	265	566	481	228	537	457
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.0	28.3	28.3	11.8	10.0	10.0	51.3	52.7	54.4	53.1	56.5	56.4
Incr Delay (d2), s/veh	0.5	0.4	0.8	2.1	0.4	0.8	9.2	2.2	6.9	0.2	1.2	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	11.1	11.8	5.0	6.3	6.9	2.5	5.3	6.5	0.4	1.6	1.4
LnGrp Delay(d),s/veh	8.5	28.7	29.1	13.9	10.5	10.9	60.5	54.9	61.3	53.3	57.7	57.8
LnGrp LOS	A	C	C	B	B	B	E	D	E	D	E	E
Approach Vol, veh/h		1246			1488			516			99	
Approach Delay, s/veh		26.3			11.3			59.1			57.1	
Approach LOS		C			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	90.1	6.6	22.3	14.2	86.9	14.0	14.9
Change Period (Y+Rc), s	4.0	5.0	4.0	4.5	4.0	5.0	4.0	4.5
Max Green Setting (Gmax), s	15.0	50.0	8.0	39.5	26.0	39.0	10.0	37.5
Max Q Clear Time (g_c+I1), s	5.8	15.4	2.9	15.9	9.4	25.4	12.0	5.1
Green Ext Time (p_c), s	0.2	20.6	0.0	1.9	0.8	10.5	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	1270	51	194	1394	102	85	59	44	118	77	53
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	62	1380	55	211	1515	111	92	64	48	128	84	58
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	3209	128	341	3206	235	192	327	278	252	181	125
Arrive On Green	0.03	0.43	0.43	0.06	0.66	0.66	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5018	200	1774	4836	354	1241	1863	1583	1276	1028	710
Grp Volume(v), veh/h	62	932	503	211	1062	564	92	64	48	128	0	142
Grp Sat Flow(s),veh/h/ln	1774	1695	1827	1774	1695	1800	1241	1863	1583	1276	0	1738
Q Serve(g_s), s	1.3	21.2	21.2	4.4	16.9	16.9	7.9	3.2	2.8	10.5	0.0	8.1
Cycle Q Clear(g_c), s	1.3	21.2	21.2	4.4	16.9	16.9	16.0	3.2	2.8	13.7	0.0	8.1
Prop In Lane	1.00		0.11	1.00		0.20	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	291	2168	1169	341	2248	1194	192	327	278	252	0	305
V/C Ratio(X)	0.21	0.43	0.43	0.62	0.47	0.47	0.48	0.20	0.17	0.51	0.00	0.47
Avail Cap(c_a), veh/h	319	2168	1169	602	2248	1194	262	432	367	324	0	403
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.73	0.73	0.73	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	17.4	17.4	10.4	9.1	9.1	47.9	38.7	38.5	44.6	0.0	40.7
Incr Delay (d2), s/veh	0.3	0.4	0.8	1.3	0.5	1.0	1.8	0.3	0.3	1.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	10.0	10.9	3.0	8.0	8.6	2.8	1.7	1.3	3.8	0.0	4.0
LnGrp Delay(d),s/veh	7.4	17.8	18.2	11.7	9.6	10.1	49.7	39.0	38.8	46.1	0.0	41.8
LnGrp LOS	A	B	B	B	A	B	D	D	D	D		D
Approach Vol, veh/h		1497			1837			204			270	
Approach Delay, s/veh		17.5			10.0			43.8			43.9	
Approach LOS		B			A			D			D	

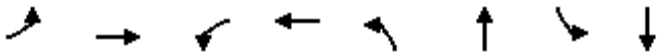
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	77.9		23.8	10.8	75.3		23.8
Change Period (Y+Rc), s	4.0	5.0		4.5	4.0	5.0		4.5
Max Green Setting (Gmax), s	6.0	65.0		25.5	23.0	48.0		25.5
Max Q Clear Time (g_c+I1), s	3.3	18.9		18.0	6.4	23.2		15.7
Green Ext Time (p_c), s	0.0	34.9		1.3	0.5	21.1		1.6

Intersection Summary		
HCM 2010 Ctrl Delay		17.2
HCM 2010 LOS		B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	62	1435	211	1626	92	64	48	128	142
v/c Ratio	0.24	0.45	0.59	0.47	0.66	0.24	0.15	0.66	0.51
Control Delay	4.0	2.9	33.6	0.7	65.0	41.6	1.0	59.8	39.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	2.9	33.6	0.7	65.0	41.6	1.0	59.8	39.6
Queue Length 50th (ft)	2	27	80	1	62	41	0	87	74
Queue Length 95th (ft)	m6	53	111	4	111	75	2	141	128
Internal Link Dist (ft)		877		1116		143			427
Turn Bay Length (ft)	185		220		80			50	
Base Capacity (vph)	258	3168	513	3481	224	431	443	308	427
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.45	0.41	0.47	0.41	0.15	0.11	0.42	0.33

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	195	1573	61	1697	54	84	82	225
v/c Ratio	0.61	0.46	0.22	0.55	0.64	0.29	0.41	0.73
Control Delay	32.2	17.7	4.5	7.5	74.7	28.2	46.5	47.0
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	17.8	4.5	7.5	74.7	28.2	46.5	47.0
Queue Length 50th (ft)	119	239	6	98	36	34	53	117
Queue Length 95th (ft)	161	299	m12	153	77	73	93	186
Internal Link Dist (ft)		484		1164		287		278
Turn Bay Length (ft)	140		200		100		80	
Base Capacity (vph)	318	3455	298	3092	147	491	349	497
Starvation Cap Reductn	0	651	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	18	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.56	0.20	0.55	0.37	0.17	0.23	0.45

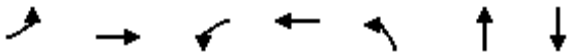
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	179	1398	49	56	1489	73	50	46	31	75	95	112
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	195	1520	53	61	1618	79	54	50	34	82	103	122
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	3166	110	313	3069	150	156	208	141	275	156	185
Arrive On Green	0.06	0.63	0.63	0.11	1.00	1.00	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	5046	176	1774	4968	242	1151	1035	704	1308	778	922
Grp Volume(v), veh/h	195	1021	552	61	1104	593	54	0	84	82	0	225
Grp Sat Flow(s),veh/h/ln	1774	1695	1832	1774	1695	1820	1151	0	1739	1308	0	1700
Q Serve(g_s), s	4.3	17.7	17.7	1.3	0.0	0.0	5.0	0.0	4.5	6.2	0.0	13.4
Cycle Q Clear(g_c), s	4.3	17.7	17.7	1.3	0.0	0.0	18.4	0.0	4.5	10.6	0.0	13.4
Prop In Lane	1.00		0.10	1.00		0.13	1.00		0.40	1.00		0.54
Lane Grp Cap(c), veh/h	356	2127	1149	313	2095	1124	156	0	349	275	0	341
V/C Ratio(X)	0.55	0.48	0.48	0.20	0.53	0.53	0.35	0.00	0.24	0.30	0.00	0.66
Avail Cap(c_a), veh/h	364	2127	1149	354	2095	1124	234	0	466	363	0	456
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	0.58	0.58	0.58	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.3	10.9	10.9	7.2	0.0	0.0	49.0	0.0	36.9	41.4	0.0	40.5
Incr Delay (d2), s/veh	1.2	0.6	1.1	0.2	0.6	1.0	1.3	0.0	0.4	0.6	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.4	9.2	0.6	0.2	0.3	1.6	0.0	2.2	2.3	0.0	6.5
LnGrp Delay(d),s/veh	7.5	11.5	12.0	7.4	0.6	1.0	50.3	0.0	37.3	42.0	0.0	42.7
LnGrp LOS	A	B	B	A	A	A	D		D	D		D
Approach Vol, veh/h		1768			1758			138			307	
Approach Delay, s/veh		11.2			1.0			42.4			42.5	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	73.0		26.6	9.4	74.0		26.6
Change Period (Y+Rc), s	3.5	5.0		4.5	3.5	5.0		4.5
Max Green Setting (Gmax), s	7.5	60.0		29.5	8.5	59.0		29.5
Max Q Clear Time (g_c+I1), s	6.3	2.0		20.4	3.3	19.7		15.4
Green Ext Time (p_c), s	0.1	44.4		1.7	0.0	32.6		2.1

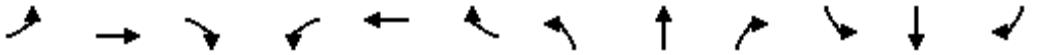
Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	9	1584	320	1233	300	280	13
v/c Ratio	0.05	0.70	0.88	0.37	0.85	0.46	0.03
Control Delay	23.0	27.6	65.6	9.0	60.7	6.4	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	27.6	65.6	9.0	60.7	6.4	15.6
Queue Length 50th (ft)	4	335	213	86	197	2	1
Queue Length 95th (ft)	16	430	#314	145	#315	63	16
Internal Link Dist (ft)		293		877		330	113
Turn Bay Length (ft)	130		300				
Base Capacity (vph)	180	2273	432	3335	405	658	480
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.70	0.74	0.37	0.74	0.43	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	1299	158	294	1131	4	276	3	255	1	1	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	9	1412	172	320	1229	4	300	3	277	1	1	11
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	274	2129	259	354	3244	11	310	5	454	51	55	388
Arrive On Green	0.46	0.46	0.46	0.24	1.00	1.00	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	450	4595	560	1774	5233	17	1397	17	1569	54	190	1341
Grp Volume(v), veh/h	9	1042	542	320	796	437	300	0	280	13	0	0
Grp Sat Flow(s),veh/h/ln	450	1695	1764	1774	1695	1860	1397	0	1586	1585	0	0
Q Serve(g_s), s	1.2	26.2	26.2	10.7	0.0	0.0	13.6	0.0	16.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	26.2	26.2	10.7	0.0	0.0	31.8	0.0	16.8	17.3	0.0	0.0
Prop In Lane	1.00		0.32	1.00		0.01	1.00		0.99	0.08		0.85
Lane Grp Cap(c), veh/h	274	1571	817	354	2101	1153	310	0	459	494	0	0
V/C Ratio(X)	0.03	0.66	0.66	0.90	0.38	0.38	0.97	0.00	0.61	0.03	0.00	0.00
Avail Cap(c_a), veh/h	274	1571	817	512	2101	1153	312	0	461	496	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	22.9	22.9	17.3	0.0	0.0	45.7	0.0	33.7	28.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.2	4.2	12.7	0.4	0.8	42.0	0.0	2.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	12.6	13.6	6.2	0.1	0.3	12.7	0.0	7.6	0.3	0.0	0.0
LnGrp Delay(d),s/veh	16.4	25.1	27.1	30.0	0.4	0.8	87.7	0.0	36.1	28.0	0.0	0.0
LnGrp LOS	B	C	C	C	A	A	F		D	C		
Approach Vol, veh/h		1593			1553			580			13	
Approach Delay, s/veh		25.7			6.6			62.8			28.0	
Approach LOS		C			A			E			C	

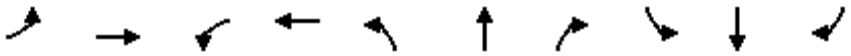
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		73.1		36.9	17.3	55.8		36.9
Change Period (Y+Rc), s		5.0		5.0	4.0	5.0		5.0
Max Green Setting (Gmax), s		68.0		32.0	23.0	41.0		32.0
Max Q Clear Time (g_c+I1), s		2.0		33.8	12.7	28.2		19.3
Green Ext Time (p_c), s		40.4		0.0	0.7	11.3		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	233	776	93	301	1185	151	216	193	140	144	161	109
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	253	843	101	327	1288	164	235	210	152	157	175	118
Adj No. of Lanes	1	3	0	1	3	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	2188	261	537	2243	286	325	300	255	285	253	215
Arrive On Green	0.19	0.95	0.95	0.11	0.49	0.49	0.12	0.16	0.16	0.09	0.14	0.14
Sat Flow, veh/h	1774	4607	549	1774	4569	582	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	253	619	325	327	956	496	235	210	152	157	175	118
Grp Sat Flow(s),veh/h/ln	1774	1695	1766	1774	1695	1760	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	8.4	1.6	1.6	10.3	22.0	22.0	12.4	11.7	9.8	8.2	9.9	7.7
Cycle Q Clear(g_c), s	8.4	1.6	1.6	10.3	22.0	22.0	12.4	11.7	9.8	8.2	9.9	7.7
Prop In Lane	1.00		0.31	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	1610	839	537	1664	864	325	300	255	285	253	215
V/C Ratio(X)	0.74	0.38	0.39	0.61	0.57	0.57	0.72	0.70	0.60	0.55	0.69	0.55
Avail Cap(c_a), veh/h	381	1610	839	547	1664	864	325	500	425	314	483	410
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	1.5	1.5	11.5	19.9	19.9	35.3	43.7	42.8	36.3	45.4	44.4
Incr Delay (d2), s/veh	6.0	0.6	1.2	1.9	1.4	2.8	7.7	3.0	2.2	1.7	3.4	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.6	0.8	5.2	10.6	11.3	6.8	6.3	4.4	4.1	5.3	3.5
LnGrp Delay(d),s/veh	21.0	2.1	2.7	13.4	21.3	22.6	43.0	46.6	45.1	38.0	48.7	46.6
LnGrp LOS	C	A	A	B	C	C	D	D	D	D	D	D
Approach Vol, veh/h		1197			1779			597			450	
Approach Delay, s/veh		6.3			20.2			44.8			44.4	
Approach LOS		A			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	59.0	14.2	22.2	16.3	57.2	17.0	19.4
Change Period (Y+Rc), s	4.0	5.0	4.0	4.5	4.0	5.0	4.0	4.5
Max Green Setting (Gmax), s	13.0	38.0	12.0	29.5	13.0	38.0	13.0	28.5
Max Q Clear Time (g_c+I1), s	10.4	24.0	10.2	13.7	12.3	3.6	14.4	11.9
Green Ext Time (p_c), s	0.2	11.2	0.1	3.0	0.1	22.0	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	253	944	327	1452	235	210	152	157	175	118
v/c Ratio	0.73	0.46	0.70	0.69	0.71	0.68	0.39	0.53	0.62	0.35
Control Delay	46.0	19.8	22.2	29.4	42.1	53.7	8.9	34.4	52.2	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	19.8	22.2	29.4	42.1	53.7	8.9	34.4	52.2	9.7
Queue Length 50th (ft)	149	127	101	306	132	142	0	84	117	0
Queue Length 95th (ft)	#257	131	#234	400	184	206	52	126	175	47
Internal Link Dist (ft)		1164		690		751			705	
Turn Bay Length (ft)	180		400							
Base Capacity (vph)	347	2044	466	2098	335	499	535	310	482	497
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.46	0.70	0.69	0.70	0.42	0.28	0.51	0.36	0.24

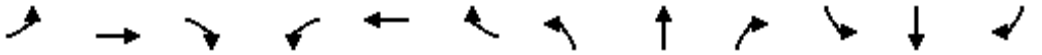
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	65	1305	108	890	48	71	46	66	99
v/c Ratio	0.12	0.49	0.31	0.33	0.51	0.42	0.24	0.56	0.56
Control Delay	3.9	9.9	4.5	5.7	73.4	61.9	15.6	73.5	58.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.9	9.9	4.5	5.7	73.4	61.9	15.6	73.5	58.3
Queue Length 50th (ft)	7	200	11	113	39	58	0	54	68
Queue Length 95th (ft)	m27	373	27	170	79	104	34	100	123
Internal Link Dist (ft)		877		1116		143			427
Turn Bay Length (ft)	185		220		80			50	
Base Capacity (vph)	552	2641	373	2691	274	494	456	341	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.49	0.29	0.33	0.18	0.14	0.10	0.19	0.20

Intersection Summary

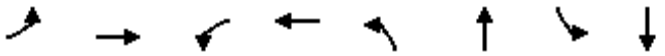
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	1143	58	99	769	50	44	65	42	61	64	27
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	65	1242	63	108	836	54	48	71	46	66	70	29
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	542	2548	129	430	2472	160	137	215	182	157	144	60
Arrive On Green	0.10	1.00	1.00	0.04	0.73	0.73	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1774	3428	174	1774	3376	218	1291	1863	1583	1270	1252	519
Grp Volume(v), veh/h	65	641	664	108	438	452	48	71	46	66	0	99
Grp Sat Flow(s),veh/h/ln	1774	1770	1832	1774	1770	1824	1291	1863	1583	1270	0	1771
Q Serve(g_s), s	1.1	0.0	0.0	1.9	11.5	11.5	4.7	4.6	3.4	6.6	0.0	6.8
Cycle Q Clear(g_c), s	1.1	0.0	0.0	1.9	11.5	11.5	11.5	4.6	3.4	11.1	0.0	6.8
Prop In Lane	1.00		0.09	1.00		0.12	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	542	1315	1362	430	1296	1336	137	215	182	157	0	204
V/C Ratio(X)	0.12	0.49	0.49	0.25	0.34	0.34	0.35	0.33	0.25	0.42	0.00	0.48
Avail Cap(c_a), veh/h	579	1315	1362	486	1296	1336	330	494	420	348	0	470
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.6	0.0	0.0	3.7	6.2	6.2	59.3	52.9	52.4	58.0	0.0	53.9
Incr Delay (d2), s/veh	0.1	0.9	0.9	0.3	0.7	0.7	1.5	0.9	0.7	1.8	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	0.3	1.0	5.8	6.0	1.7	2.4	1.5	2.4	0.0	3.4
LnGrp Delay(d),s/veh	3.7	0.9	0.9	4.0	6.9	6.9	60.8	53.8	53.1	59.8	0.0	55.7
LnGrp LOS	A	A	A	A	A	A	E	D	D	E		E
Approach Vol, veh/h		1370			998			165			165	
Approach Delay, s/veh		1.0			6.5			55.6			57.3	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	100.2		19.5	8.9	101.6		19.5
Change Period (Y+Rc), s	4.0	5.0		4.5	4.0	5.0		4.5
Max Green Setting (Gmax), s	9.0	73.0		34.5	9.0	73.0		34.5
Max Q Clear Time (g_c+I1), s	3.1	13.5		13.5	3.9	2.0		13.1
Green Ext Time (p_c), s	0.0	25.0		1.5	0.1	26.4		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	1006	38	1141	33	77	60	53
v/c Ratio	0.25	0.36	0.08	0.41	0.28	0.42	0.57	0.30
Control Delay	3.3	5.4	2.1	4.3	59.8	38.8	76.3	28.6
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.3	5.8	2.1	4.3	59.8	38.8	76.3	28.6
Queue Length 50th (ft)	10	130	3	102	27	34	49	14
Queue Length 95th (ft)	25	189	m8	157	59	82	94	54
Internal Link Dist (ft)		484		1171		287		278
Turn Bay Length (ft)	140		200		100		80	
Base Capacity (vph)	504	2813	524	2750	356	484	319	471
Starvation Cap Reductn	0	1093	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.58	0.07	0.41	0.09	0.16	0.19	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	888	38	35	971	79	30	37	34	55	17	32
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	105	965	41	38	1055	86	33	40	37	60	18	35
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	511	2549	108	505	2446	199	163	98	90	144	62	120
Arrive On Green	0.05	0.74	0.74	0.11	1.00	1.00	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1774	3459	147	1774	3315	270	1346	892	825	1317	567	1102
Grp Volume(v), veh/h	105	494	512	38	563	578	33	0	77	60	0	53
Grp Sat Flow(s),veh/h/ln	1774	1770	1837	1774	1770	1815	1346	0	1717	1317	0	1668
Q Serve(g_s), s	1.7	13.2	13.2	0.6	0.0	0.0	3.0	0.0	5.4	5.8	0.0	3.8
Cycle Q Clear(g_c), s	1.7	13.2	13.2	0.6	0.0	0.0	6.8	0.0	5.4	11.2	0.0	3.8
Prop In Lane	1.00		0.08	1.00		0.15	1.00		0.48	1.00		0.66
Lane Grp Cap(c), veh/h	511	1304	1353	505	1306	1340	163	0	188	144	0	182
V/C Ratio(X)	0.21	0.38	0.38	0.08	0.43	0.43	0.20	0.00	0.41	0.42	0.00	0.29
Avail Cap(c_a), veh/h	615	1304	1353	539	1306	1340	373	0	456	350	0	443
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.1	6.2	6.2	3.4	0.0	0.0	56.4	0.0	54.0	59.2	0.0	53.3
Incr Delay (d2), s/veh	0.2	0.8	0.8	0.0	0.8	0.8	0.6	0.0	1.4	1.9	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.7	7.0	0.3	0.3	0.3	1.1	0.0	2.7	2.2	0.0	1.8
LnGrp Delay(d),s/veh	3.3	7.0	7.0	3.5	0.8	0.8	57.0	0.0	55.4	61.1	0.0	54.1
LnGrp LOS	A	A	A	A	A	A	E		E	E		D
Approach Vol, veh/h		1111			1179			110			113	
Approach Delay, s/veh		6.7			0.9			55.9			57.8	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	100.9		18.7	10.5	100.8		18.7
Change Period (Y+Rc), s	3.5	* 5		4.5	3.5	5.0		4.5
Max Green Setting (Gmax), s	14.5	* 70		34.5	9.5	73.0		34.5
Max Q Clear Time (g_c+I1), s	3.7	2.0		8.8	2.6	15.2		13.2
Green Ext Time (p_c), s	0.2	24.5		1.1	0.0	23.4		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

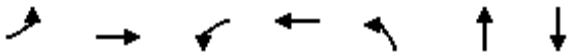
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	1065	216	171	623	0	222	2	284	1	0	0
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	9	1158	235	186	677	0	241	2	309	1	0	0
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	521	1801	363	290	2485	0	436	2	348	88	0	0
Arrive On Green	0.61	0.61	0.61	0.07	0.93	0.00	0.22	0.22	0.22	0.22	0.00	0.00
Sat Flow, veh/h	759	2936	592	1774	3632	0	1412	10	1575	148	0	0
Grp Volume(v), veh/h	9	695	698	186	677	0	241	0	311	1	0	0
Grp Sat Flow(s),veh/h/ln	759	1770	1758	1774	1770	0	1412	0	1585	148	0	0
Q Serve(g_s), s	0.6	32.5	33.1	4.9	2.2	0.0	0.0	0.0	24.7	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.6	32.5	33.1	4.9	2.2	0.0	15.9	0.0	24.7	24.8	0.0	0.0
Prop In Lane	1.00		0.34	1.00		0.00	1.00		0.99	1.00		0.00
Lane Grp Cap(c), veh/h	521	1086	1079	290	2485	0	436	0	350	88	0	0
V/C Ratio(X)	0.02	0.64	0.65	0.64	0.27	0.00	0.55	0.00	0.89	0.01	0.00	0.00
Avail Cap(c_a), veh/h	521	1086	1079	324	2485	0	505	0	427	139	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.90	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.8	16.0	16.1	16.0	1.4	0.0	45.7	0.0	49.1	61.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.9	3.0	3.3	0.2	0.0	1.1	0.0	17.5	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	16.7	16.8	3.6	1.0	0.0	8.0	0.0	12.5	0.0	0.0	0.0
LnGrp Delay(d),s/veh	9.9	18.9	19.1	19.2	1.6	0.0	46.8	0.0	66.5	61.1	0.0	0.0
LnGrp LOS	A	B	B	B	A		D		E	E		
Approach Vol, veh/h		1402			863			552			1	
Approach Delay, s/veh		18.9			5.4			57.9			61.1	
Approach LOS		B			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		96.3		33.7	11.5	84.7		33.7
Change Period (Y+Rc), s		5.0		5.0	4.5	5.0		5.0
Max Green Setting (Gmax), s		85.0		35.0	9.5	71.0		35.0
Max Q Clear Time (g_c+I1), s		4.2		26.7	6.9	35.1		26.8
Green Ext Time (p_c), s		26.8		1.9	0.1	19.8		1.9

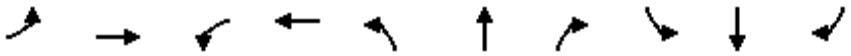
Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	9	1393	186	677	241	311	1
v/c Ratio	0.02	0.67	0.69	0.27	0.80	0.65	0.01
Control Delay	13.5	20.5	41.7	1.1	67.9	23.8	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	20.5	41.7	1.1	67.9	23.8	36.0
Queue Length 50th (ft)	3	407	45	7	193	95	1
Queue Length 95th (ft)	12	530	#140	17	275	185	6
Internal Link Dist (ft)		375		877		330	113
Turn Bay Length (ft)	130		300				
Base Capacity (vph)	437	2071	272	2513	379	561	117
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.67	0.68	0.27	0.64	0.55	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	103	1045	218	957	114	224	125	61	103	104
v/c Ratio	0.28	0.56	0.58	0.47	0.38	0.70	0.33	0.28	0.42	0.33
Control Delay	10.3	19.6	14.9	17.8	40.2	62.2	9.5	38.2	55.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	19.6	14.9	17.8	40.2	62.2	9.5	38.2	55.2	9.0
Queue Length 50th (ft)	26	313	63	235	76	182	0	39	80	0
Queue Length 95th (ft)	44	452	116	350	117	254	52	70	130	40
Internal Link Dist (ft)		1171		690		751			705	
Turn Bay Length (ft)	180		400							
Base Capacity (vph)	459	1859	379	2016	318	551	556	223	494	506
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.56	0.58	0.47	0.36	0.41	0.22	0.27	0.21	0.21

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	752	210	201	750	131	105	206	115	56	95	96
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	103	817	228	218	815	142	114	224	125	61	103	104
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	423	1646	459	491	1846	322	272	284	241	178	244	207
Arrive On Green	0.11	1.00	1.00	0.06	0.61	0.61	0.07	0.15	0.15	0.05	0.13	0.13
Sat Flow, veh/h	1774	2735	763	1774	3014	525	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	103	529	516	218	478	479	114	224	125	61	103	104
Grp Sat Flow(s),veh/h/ln	1774	1770	1728	1774	1770	1770	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.8	0.0	0.0	6.1	18.7	18.7	7.1	15.1	9.4	3.8	6.6	7.9
Cycle Q Clear(g_c), s	2.8	0.0	0.0	6.1	18.7	18.7	7.1	15.1	9.4	3.8	6.6	7.9
Prop In Lane	1.00		0.44	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	423	1065	1040	491	1084	1084	272	284	241	178	244	207
V/C Ratio(X)	0.24	0.50	0.50	0.44	0.44	0.44	0.42	0.79	0.52	0.34	0.42	0.50
Avail Cap(c_a), veh/h	534	1065	1040	516	1084	1084	326	552	469	216	494	420
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.1	0.0	0.0	8.3	13.4	13.4	44.0	53.1	50.7	46.0	52.0	52.5
Incr Delay (d2), s/veh	0.3	1.5	1.6	0.6	1.3	1.3	1.0	4.9	1.7	1.1	1.2	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.5	0.5	3.0	9.4	9.4	3.6	8.2	4.3	1.9	3.5	3.6
LnGrp Delay(d),s/veh	9.4	1.5	1.6	8.9	14.7	14.7	45.0	57.9	52.4	47.1	53.1	54.4
LnGrp LOS	A	A	A	A	B	B	D	E	D	D	D	D
Approach Vol, veh/h		1148			1175			463			268	
Approach Delay, s/veh		2.3			13.6			53.3			52.3	
Approach LOS		A			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	84.6	10.2	24.3	12.2	83.2	13.0	21.5
Change Period (Y+Rc), s	4.0	5.0	4.0	4.5	4.0	5.0	4.0	4.5
Max Green Setting (Gmax), s	15.0	50.0	9.0	38.5	10.0	55.0	13.0	34.5
Max Q Clear Time (g_c+I1), s	4.8	20.7	5.8	17.1	8.1	2.0	9.1	9.9
Green Ext Time (p_c), s	0.1	15.9	0.0	2.8	0.1	20.5	0.1	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	997	28	197	1458	68	88	63	58	123	141	68
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	92	1084	30	214	1585	74	96	68	63	134	153	74
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	2147	59	473	2150	100	176	410	348	294	261	126
Arrive On Green	0.10	1.00	1.00	0.06	0.62	0.62	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	3518	97	1774	3444	160	1149	1863	1583	1254	1187	574
Grp Volume(v), veh/h	92	545	569	214	811	848	96	68	63	134	0	227
Grp Sat Flow(s),veh/h/ln	1774	1770	1846	1774	1770	1834	1149	1863	1583	1254	0	1761
Q Serve(g_s), s	2.4	0.0	0.0	5.8	41.4	42.0	10.6	3.8	4.2	12.6	0.0	15.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	5.8	41.4	42.0	25.6	3.8	4.2	16.4	0.0	15.0
Prop In Lane	1.00		0.05	1.00		0.09	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	238	1080	1127	473	1105	1145	176	410	348	294	0	388
V/C Ratio(X)	0.39	0.50	0.50	0.45	0.73	0.74	0.55	0.17	0.18	0.46	0.00	0.59
Avail Cap(c_a), veh/h	255	1080	1127	520	1105	1145	197	444	378	313	0	413
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.33	0.33	0.33	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	0.0	7.9	17.0	17.1	56.8	41.0	41.2	47.7	0.0	45.4
Incr Delay (d2), s/veh	0.3	0.6	0.5	0.6	3.9	3.9	2.6	0.2	0.2	1.1	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.2	0.2	2.9	21.3	22.4	3.5	2.0	1.9	4.4	0.0	7.5
LnGrp Delay(d),s/veh	16.0	0.6	0.5	8.6	20.9	21.0	59.5	41.2	41.4	48.8	0.0	47.3
LnGrp LOS	B	A	A	A	C	C	E	D	D	D		D
Approach Vol, veh/h		1206			1873			227			361	
Approach Delay, s/veh		1.7			19.5			49.0			47.8	
Approach LOS		A			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	86.1		33.1	12.5	84.3		33.1
Change Period (Y+Rc), s	4.0	5.0		* 4.5	4.5	* 5		4.5
Max Green Setting (Gmax), s	8.0	78.0		* 31	11.5	* 75		30.5
Max Q Clear Time (g_c+I1), s	4.4	44.0		27.6	7.8	2.0		18.4
Green Ext Time (p_c), s	0.1	25.8		1.0	0.2	42.7		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

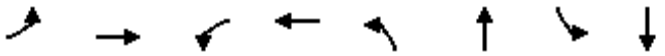
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	92	1114	214	1659	96	68	63	134	227
v/c Ratio	0.43	0.48	0.56	0.70	1.01	0.22	0.20	0.62	0.74
Control Delay	19.3	19.1	10.8	16.3	147.1	45.9	11.1	61.7	61.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	19.1	10.8	16.3	147.1	45.9	11.1	61.7	61.4
Queue Length 50th (ft)	39	245	40	405	~87	50	0	107	172
Queue Length 95th (ft)	m64	m352	86	626	#167	87	38	163	240
Internal Link Dist (ft)		877		1116		143			427
Turn Bay Length (ft)	185		220		80			50	
Base Capacity (vph)	222	2318	406	2366	134	444	425	308	428
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.48	0.53	0.70	0.72	0.15	0.15	0.44	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

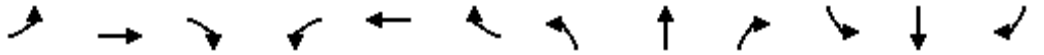
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	171	1393	49	1460	53	84	98	188
v/c Ratio	0.54	0.54	0.16	0.61	0.67	0.33	0.60	0.73
Control Delay	11.5	10.0	6.3	27.6	90.1	35.7	67.2	59.5
Queue Delay	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	10.9	6.3	27.6	90.1	35.7	67.2	59.5
Queue Length 50th (ft)	25	261	8	632	43	42	79	127
Queue Length 95th (ft)	74	393	m19	734	87	87	132	197
Internal Link Dist (ft)		482		1164		287		278
Turn Bay Length (ft)	140		200		100		80	
Base Capacity (vph)	345	2566	324	2397	144	443	298	444
Starvation Cap Reductn	0	808	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.79	0.15	0.61	0.37	0.19	0.33	0.42

Intersection Summary

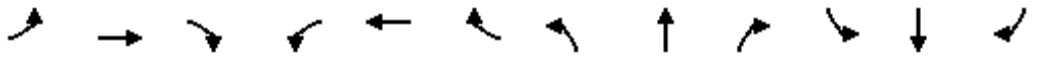
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	157	1227	54	45	1294	49	49	43	34	90	89	84
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	171	1334	59	49	1407	53	53	47	37	98	97	91
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	2356	104	321	2342	88	140	167	132	227	153	144
Arrive On Green	0.05	0.68	0.68	0.01	0.22	0.22	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1774	3453	153	1774	3478	131	1191	967	761	1308	885	831
Grp Volume(v), veh/h	171	683	710	49	715	745	53	0	84	98	0	188
Grp Sat Flow(s),veh/h/ln	1774	1770	1836	1774	1770	1840	1191	0	1728	1308	0	1716
Q Serve(g_s), s	3.8	25.9	26.1	1.1	47.1	47.3	5.6	0.0	5.5	9.1	0.0	13.2
Cycle Q Clear(g_c), s	3.8	25.9	26.1	1.1	47.1	47.3	18.9	0.0	5.5	14.6	0.0	13.2
Prop In Lane	1.00		0.08	1.00		0.07	1.00		0.44	1.00		0.48
Lane Grp Cap(c), veh/h	263	1207	1253	321	1191	1239	140	0	299	227	0	297
V/C Ratio(X)	0.65	0.57	0.57	0.15	0.60	0.60	0.38	0.00	0.28	0.43	0.00	0.63
Avail Cap(c_a), veh/h	338	1207	1253	357	1191	1239	223	0	419	317	0	416
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.52	0.52	0.52	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	10.7	10.7	8.3	34.8	34.9	58.7	0.0	46.7	53.1	0.0	49.9
Incr Delay (d2), s/veh	2.5	1.7	1.7	0.1	1.2	1.1	1.7	0.0	0.5	1.3	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	13.1	13.6	0.5	23.5	24.5	1.9	0.0	2.7	3.4	0.0	6.5
LnGrp Delay(d),s/veh	24.2	12.4	12.4	8.4	36.0	36.0	60.3	0.0	47.2	54.4	0.0	52.1
LnGrp LOS	C	B	B	A	D	D	E		D	D		D
Approach Vol, veh/h		1564			1509			137			286	
Approach Delay, s/veh		13.7			35.1			52.3			52.9	
Approach LOS		B			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	92.5		27.0	9.3	93.7		27.0
Change Period (Y+Rc), s	3.5	5.0		4.5	3.5	5.0		4.5
Max Green Setting (Gmax), s	12.5	73.0		31.5	8.5	77.0		31.5
Max Q Clear Time (g_c+I1), s	5.8	49.3		20.9	3.1	28.1		16.6
Green Ext Time (p_c), s	0.2	19.6		1.6	0.0	34.3		1.9

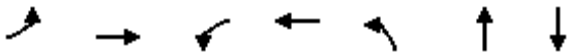
Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	1106	174	336	1050	1	303	1	284	2	2	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	5	1202	189	365	1141	1	329	1	309	2	2	4
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	1298	203	361	2233	2	345	2	486	85	90	141
Arrive On Green	0.42	0.42	0.42	0.32	1.00	1.00	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	491	3068	480	1774	3629	3	1404	5	1579	165	293	458
Grp Volume(v), veh/h	5	691	700	365	556	586	329	0	310	8	0	0
Grp Sat Flow(s),veh/h/ln	491	1770	1778	1774	1770	1862	1404	0	1584	917	0	0
Q Serve(g_s), s	0.8	48.0	48.7	21.0	0.0	0.0	18.0	0.0	21.9	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.8	48.0	48.7	21.0	0.0	0.0	40.0	0.0	21.9	22.0	0.0	0.0
Prop In Lane	1.00		0.27	1.00		0.00	1.00		1.00	0.25		0.50
Lane Grp Cap(c), veh/h	263	749	752	361	1089	1146	345	0	487	317	0	0
V/C Ratio(X)	0.02	0.92	0.93	1.01	0.51	0.51	0.95	0.00	0.64	0.03	0.00	0.00
Avail Cap(c_a), veh/h	263	749	752	361	1089	1146	345	0	487	317	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.55	0.55	0.55	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.9	35.5	35.7	31.0	0.0	0.0	51.3	0.0	38.7	32.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	18.7	19.7	38.0	0.9	0.9	36.2	0.0	2.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	27.3	28.0	16.6	0.3	0.3	15.3	0.0	9.9	0.2	0.0	0.0
LnGrp Delay(d),s/veh	22.0	54.2	55.4	69.1	0.9	0.9	87.5	0.0	41.5	32.3	0.0	0.0
LnGrp LOS	C	D	E	F	A	A	F		D	C		
Approach Vol, veh/h		1396			1507			639			8	
Approach Delay, s/veh		54.7			17.4			65.2			32.3	
Approach LOS		D			B			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		85.0		45.0	25.0	60.0		45.0
Change Period (Y+Rc), s		5.0		5.0	4.0	5.0		5.0
Max Green Setting (Gmax), s		80.0		40.0	21.0	55.0		40.0
Max Q Clear Time (g_c+I1), s		2.0		42.0	23.0	50.7		24.0
Green Ext Time (p_c), s		36.8		0.0	0.0	3.9		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.7
HCM 2010 LOS	D



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	5	1391	365	1142	329	310	8
v/c Ratio	0.03	0.93	0.90	0.49	0.87	0.48	0.02
Control Delay	22.6	47.6	64.6	3.8	68.1	6.2	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	47.6	64.6	3.8	68.1	6.2	24.3
Queue Length 50th (ft)	2	578	222	52	258	1	2
Queue Length 95th (ft)	11	#737	m#456	59	#378	67	15
Internal Link Dist (ft)		293		877		330	113
Turn Bay Length (ft)	130		300				
Base Capacity (vph)	198	1490	404	2312	431	701	508
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.93	0.90	0.49	0.76	0.44	0.02

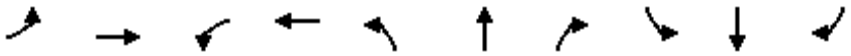
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	143	908	96	275	1004	90	176	139	160	12	43	36
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	155	987	104	299	1091	98	191	151	174	13	47	39
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	1318	139	305	1390	125	517	537	457	402	537	457
Arrive On Green	0.03	0.13	0.13	0.11	0.42	0.42	0.06	0.29	0.29	0.06	0.29	0.29
Sat Flow, veh/h	1774	3232	340	1774	3285	295	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	155	540	551	299	587	602	191	151	174	13	47	39
Grp Sat Flow(s),veh/h/ln	1774	1770	1803	1774	1770	1811	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	6.2	38.2	38.2	13.5	37.3	37.3	8.0	8.2	11.4	0.6	2.4	2.3
Cycle Q Clear(g_c), s	6.2	38.2	38.2	13.5	37.3	37.3	8.0	8.2	11.4	0.6	2.4	2.3
Prop In Lane	1.00		0.19	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	721	735	305	749	766	517	537	457	402	537	457
V/C Ratio(X)	0.55	0.75	0.75	0.98	0.78	0.79	0.37	0.28	0.38	0.03	0.09	0.09
Avail Cap(c_a), veh/h	283	721	735	305	749	766	517	537	457	402	537	457
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	49.9	49.9	29.8	32.4	32.4	31.3	35.8	37.0	27.9	33.8	33.7
Incr Delay (d2), s/veh	7.4	7.0	6.9	46.8	8.1	7.9	2.0	1.3	2.4	0.1	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	20.2	20.5	14.7	19.8	20.2	1.5	4.4	5.3	0.3	1.3	1.1
LnGrp Delay(d),s/veh	34.4	56.9	56.8	76.6	40.5	40.4	33.3	37.1	39.4	28.1	34.1	34.1
LnGrp LOS	C	E	E	E	D	D	C	D	D	C	C	C
Approach Vol, veh/h		1246			1488			516			99	
Approach Delay, s/veh		54.0			47.7			36.5			33.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	60.0	12.0	42.0	18.0	58.0	12.0	42.0
Change Period (Y+Rc), s	4.0	5.0	4.0	4.5	4.0	5.0	4.0	4.5
Max Green Setting (Gmax), s	12.0	55.0	8.0	37.5	14.0	53.0	8.0	37.5
Max Q Clear Time (g_c+I1), s	8.2	39.3	2.6	13.4	15.5	40.2	10.0	4.4
Green Ext Time (p_c), s	0.1	11.8	0.0	1.9	0.0	10.0	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.9
HCM 2010 LOS	D



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	155	1091	299	1189	191	151	174	13	47	39
v/c Ratio	0.42	0.55	0.67	0.55	0.79	0.56	0.46	0.07	0.28	0.16
Control Delay	7.8	23.7	16.9	17.5	70.3	59.0	10.8	39.3	57.0	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	23.7	16.9	17.5	70.3	59.0	10.8	39.3	57.0	1.3
Queue Length 50th (ft)	25	345	63	278	150	116	0	9	39	0
Queue Length 95th (ft)	52	543	178	471	206	186	63	25	72	0
Internal Link Dist (ft)		1164		690		751			705	
Turn Bay Length (ft)	180		400							
Base Capacity (vph)	409	1993	537	2170	241	566	602	210	537	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.55	0.56	0.55	0.79	0.27	0.29	0.06	0.09	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	1270	51	194	1394	102	85	59	44	118	77	53
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	62	1380	55	211	1515	111	92	64	48	128	84	58
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	2219	88	324	2218	162	192	327	278	252	181	125
Arrive On Green	0.04	0.64	0.64	0.06	0.66	0.66	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	3470	138	1774	3346	244	1241	1863	1583	1276	1028	710
Grp Volume(v), veh/h	62	703	732	211	797	829	92	64	48	128	0	142
Grp Sat Flow(s),veh/h/ln	1774	1770	1838	1774	1770	1820	1241	1863	1583	1276	0	1738
Q Serve(g_s), s	1.3	26.1	26.3	4.4	30.4	31.0	7.9	3.2	2.8	10.5	0.0	8.1
Cycle Q Clear(g_c), s	1.3	26.1	26.3	4.4	30.4	31.0	16.0	3.2	2.8	13.7	0.0	8.1
Prop In Lane	1.00		0.08	1.00		0.13	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	252	1132	1176	324	1173	1206	192	327	278	252	0	305
V/C Ratio(X)	0.25	0.62	0.62	0.65	0.68	0.69	0.48	0.20	0.17	0.51	0.00	0.47
Avail Cap(c_a), veh/h	280	1132	1176	585	1173	1206	262	432	367	324	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.21	0.21	0.21	0.09	0.09	0.09	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	11.9	11.9	13.0	11.4	11.5	47.9	38.7	38.5	44.6	0.0	40.7
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.2	0.3	0.3	1.8	0.3	0.3	1.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	12.9	13.4	3.6	14.7	15.5	2.8	1.7	1.3	3.8	0.0	4.0
LnGrp Delay(d),s/veh	10.6	12.4	12.4	13.2	11.7	11.8	49.7	39.0	38.8	46.1	0.0	41.8
LnGrp LOS	B	B	B	B	B	B	D	D	D	D		D
Approach Vol, veh/h		1497			1837			204			270	
Approach Delay, s/veh		12.3			11.9			43.8			43.9	
Approach LOS		B			B			D			D	

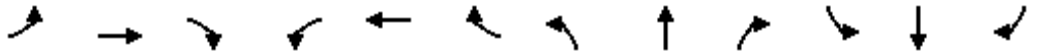
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	77.9		23.8	10.8	75.3		23.8
Change Period (Y+Rc), s	4.0	5.0		4.5	4.0	5.0		4.5
Max Green Setting (Gmax), s	6.0	65.0		25.5	23.0	48.0		25.5
Max Q Clear Time (g_c+I1), s	3.3	33.0		18.0	6.4	28.3		15.7
Green Ext Time (p_c), s	0.0	26.7		1.3	0.5	17.5		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	62	1435	211	1626	92	64	48	128	142
v/c Ratio	0.27	0.66	0.63	0.67	0.66	0.24	0.15	0.66	0.51
Control Delay	5.5	3.9	18.7	13.2	65.0	41.6	1.0	59.8	39.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	3.9	18.7	13.2	65.0	41.6	1.0	59.8	39.6
Queue Length 50th (ft)	1	42	35	325	62	41	0	87	74
Queue Length 95th (ft)	m5	m82	122	522	111	75	2	141	128
Internal Link Dist (ft)		877		1116		143			427
Turn Bay Length (ft)	185		220		80			50	
Base Capacity (vph)	233	2174	485	2422	224	431	443	308	427
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.66	0.44	0.67	0.41	0.15	0.11	0.42	0.33

Intersection Summary

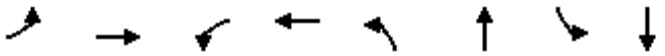
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	179	1398	49	56	1489	73	50	46	31	75	95	112
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	195	1520	53	61	1618	79	54	50	34	82	103	122
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	2190	76	271	2123	103	156	208	141	275	156	185
Arrive On Green	0.06	0.63	0.63	0.07	0.82	0.82	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	3490	121	1774	3436	167	1151	1035	704	1308	778	922
Grp Volume(v), veh/h	195	769	804	61	830	867	54	0	84	82	0	225
Grp Sat Flow(s),veh/h/ln	1774	1770	1841	1774	1770	1833	1151	0	1739	1308	0	1700
Q Serve(g_s), s	4.3	31.5	31.7	1.3	24.4	25.0	5.0	0.0	4.5	6.2	0.0	13.4
Cycle Q Clear(g_c), s	4.3	31.5	31.7	1.3	24.4	25.0	18.4	0.0	4.5	10.6	0.0	13.4
Prop In Lane	1.00		0.07	1.00		0.09	1.00		0.40	1.00		0.54
Lane Grp Cap(c), veh/h	291	1110	1155	271	1093	1133	156	0	349	275	0	341
V/C Ratio(X)	0.67	0.69	0.70	0.23	0.76	0.77	0.35	0.00	0.24	0.30	0.00	0.66
Avail Cap(c_a), veh/h	299	1110	1155	313	1093	1133	234	0	466	363	0	456
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	13.5	13.5	11.2	5.9	6.0	49.0	0.0	36.9	41.4	0.0	40.5
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.0	0.5	0.5	1.3	0.0	0.4	0.6	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	15.3	16.0	0.6	11.4	12.2	1.6	0.0	2.2	2.3	0.0	6.5
LnGrp Delay(d),s/veh	15.4	13.8	13.9	11.2	6.4	6.4	50.3	0.0	37.3	42.0	0.0	42.7
LnGrp LOS	B	B	B	B	A	A	D		D	D		D
Approach Vol, veh/h		1768			1758			138			307	
Approach Delay, s/veh		14.0			6.6			42.4			42.5	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	73.0		26.6	9.4	74.0		26.6
Change Period (Y+Rc), s	3.5	5.0		4.5	3.5	5.0		4.5
Max Green Setting (Gmax), s	7.5	60.0		29.5	8.5	59.0		29.5
Max Q Clear Time (g_c+I1), s	6.3	27.0		20.4	3.3	33.7		15.4
Green Ext Time (p_c), s	0.1	28.7		1.7	0.0	22.6		2.1

Intersection Summary			
HCM 2010 Ctrl Delay		13.9	
HCM 2010 LOS		B	

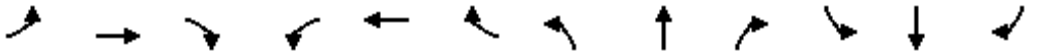


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	195	1573	61	1697	54	84	82	225
v/c Ratio	0.63	0.65	0.24	0.81	0.64	0.29	0.41	0.73
Control Delay	32.9	13.4	6.2	16.5	74.7	28.2	46.5	47.0
Queue Delay	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	14.5	6.2	16.5	74.7	28.2	46.5	47.0
Queue Length 50th (ft)	76	317	8	231	36	34	53	117
Queue Length 95th (ft)	#191	506	m10	m185	77	73	93	186
Internal Link Dist (ft)		484		1164		287		278
Turn Bay Length (ft)	140		200		100		80	
Base Capacity (vph)	309	2402	273	2084	147	491	349	497
Starvation Cap Reductn	0	534	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.84	0.22	0.81	0.37	0.17	0.23	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

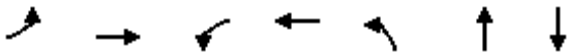
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	1299	158	294	1131	4	276	3	255	1	1	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	9	1412	172	320	1229	4	300	3	277	1	1	11
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1359	164	356	2270	7	461	5	442	50	54	379
Arrive On Green	0.43	0.43	0.43	0.22	0.83	0.83	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	450	3180	384	1774	3618	12	1397	17	1569	54	191	1344
Grp Volume(v), veh/h	9	781	803	320	601	632	300	0	280	13	0	0
Grp Sat Flow(s),veh/h/ln	450	1770	1795	1774	1770	1861	1397	0	1586	1588	0	0
Q Serve(g_s), s	1.3	47.0	47.0	15.1	11.3	11.3	20.8	0.0	16.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.3	47.0	47.0	15.1	11.3	11.3	21.4	0.0	16.9	0.6	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.01	1.00		0.99	0.08		0.85
Lane Grp Cap(c), veh/h	258	756	767	356	1110	1167	461	0	447	483	0	0
V/C Ratio(X)	0.03	1.03	1.05	0.90	0.54	0.54	0.65	0.00	0.63	0.03	0.00	0.00
Avail Cap(c_a), veh/h	258	756	767	356	1110	1167	461	0	447	483	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	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	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.4	31.5	31.5	31.6	4.3	4.3	36.0	0.0	34.5	28.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	41.4	45.6	28.0	1.9	1.8	7.0	0.0	6.5	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	31.6	32.9	12.1	5.8	6.1	9.2	0.0	8.2	0.3	0.0	0.0
LnGrp Delay(d),s/veh	18.7	72.9	77.1	59.5	6.2	6.1	42.9	0.0	41.0	28.7	0.0	0.0
LnGrp LOS	B	F	F	E	A	A	D		D	C		
Approach Vol, veh/h		1593			1553			580			13	
Approach Delay, s/veh		74.7			17.2			42.0			28.7	
Approach LOS		E			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		74.0		36.0	22.0	52.0		36.0
Change Period (Y+Rc), s		5.0		5.0	4.0	5.0		5.0
Max Green Setting (Gmax), s		69.0		31.0	18.0	47.0		31.0
Max Q Clear Time (g_c+I1), s		13.3		23.4	17.1	49.0		2.6
Green Ext Time (p_c), s		37.4		1.8	0.1	0.0		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	45.6
HCM 2010 LOS	D



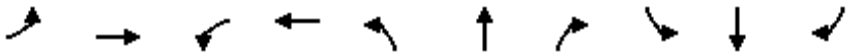
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	9	1584	320	1233	300	280	13
v/c Ratio	0.05	1.06	0.89	0.56	0.76	0.43	0.03
Control Delay	19.6	71.8	61.0	13.7	50.4	6.1	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	71.8	61.0	13.7	50.4	6.1	15.9
Queue Length 50th (ft)	4	~645	209	207	194	2	1
Queue Length 95th (ft)	14	#786	m#301	290	#325	63	16
Internal Link Dist (ft)		293		877		330	113
Turn Bay Length (ft)	130		300				
Base Capacity (vph)	180	1496	358	2220	393	646	466
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	1.06	0.89	0.56	0.76	0.43	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

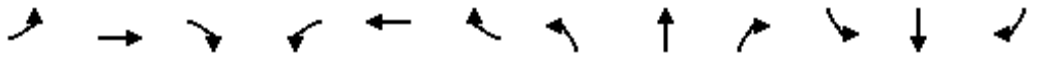
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	253	944	327	1452	235	210	152	157	175	118
v/c Ratio	0.82	0.63	0.73	0.90	0.82	0.67	0.39	0.63	0.67	0.36
Control Delay	51.0	24.0	24.0	35.4	57.3	54.5	9.6	45.2	58.3	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	24.0	24.0	35.4	57.3	54.5	9.6	45.2	58.3	11.3
Queue Length 50th (ft)	157	161	100	476	138	141	0	87	119	0
Queue Length 95th (ft)	m200	230	204	#593	#208	222	56	146	#203	52
Internal Link Dist (ft)		1164		690		751			705	
Turn Bay Length (ft)	180		400							
Base Capacity (vph)	310	1496	451	1622	287	313	392	248	262	324
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.63	0.73	0.90	0.82	0.67	0.39	0.63	0.67	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	233	776	93	301	1185	151	216	193	140	144	161	109
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	253	843	101	327	1288	164	235	210	152	157	175	118
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	1360	163	576	1466	186	299	313	266	258	262	223
Arrive On Green	0.27	0.85	0.85	0.17	0.46	0.46	0.10	0.17	0.17	0.07	0.14	0.14
Sat Flow, veh/h	1774	3184	381	1774	3161	400	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	253	469	475	327	718	734	235	210	152	157	175	118
Grp Sat Flow(s),veh/h/ln	1774	1770	1795	1774	1770	1792	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	8.1	9.0	9.0	9.5	40.3	40.9	11.0	11.6	9.7	8.0	9.8	7.6
Cycle Q Clear(g_c), s	8.1	9.0	9.0	9.5	40.3	40.9	11.0	11.6	9.7	8.0	9.8	7.6
Prop In Lane	1.00		0.21	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	756	767	576	820	831	299	313	266	258	262	223
V/C Ratio(X)	0.74	0.62	0.62	0.57	0.88	0.88	0.79	0.67	0.57	0.61	0.67	0.53
Avail Cap(c_a), veh/h	341	756	767	576	820	831	299	313	266	258	262	223
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	5.2	5.2	11.1	26.6	26.8	37.7	42.9	42.1	38.1	44.8	43.9
Incr Delay (d2), s/veh	13.6	3.8	3.7	4.0	12.6	13.1	18.6	10.9	8.6	10.3	12.7	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.7	4.8	5.2	22.4	23.2	3.3	6.9	4.9	1.3	6.0	3.9
LnGrp Delay(d),s/veh	31.7	9.0	9.0	15.1	39.2	39.9	56.3	53.8	50.7	48.4	57.5	52.6
LnGrp LOS	C	A	A	B	D	D	E	D	D	D	E	D
Approach Vol, veh/h		1197			1779			597			450	
Approach Delay, s/veh		13.8			35.1			54.0			53.0	
Approach LOS		B			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	56.0	12.0	23.0	23.0	52.0	15.0	20.0
Change Period (Y+Rc), s	4.0	5.0	4.0	4.5	4.0	5.0	4.0	4.5
Max Green Setting (Gmax), s	15.0	51.0	8.0	18.5	19.0	47.0	11.0	15.5
Max Q Clear Time (g_c+I1), s	10.1	42.9	10.0	13.6	11.5	11.0	13.0	11.8
Green Ext Time (p_c), s	0.3	6.9	0.0	1.5	0.6	22.8	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.6
HCM 2010 LOS	C

Arterial LOS

Arterial Level of Service: EB St. Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	9.9	15.1	25.0	0.09	12.4	F
5th Street	II	40	20.8	5.2	26.0	0.18	25.1	C
SFRT	II	40	24.9	0.1	25.0	0.23	32.6	B
Calle Lorca	II	40	12.3	4.6	16.9	0.11	22.8	C
S. Pacheco St.	II	40	26.1	14.8	40.9	0.24	20.9	D
Total	II		94.0	39.8	133.8	0.84	22.5	C

Arterial Level of Service: WB St. Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	15.2	32.0	0.15	16.4	E
Calle Lorca	II	40	26.1	3.6	29.7	0.24	28.7	B
SFRT	II	40	12.3	0.1	12.4	0.11	31.0	B
5th Street	II	40	24.9	5.0	29.9	0.23	27.3	C
Llano Street	II	40	20.8	6.5	27.3	0.18	23.9	C
Total	II		100.9	30.4	131.3	0.90	24.6	C

Arterial Level of Service: EB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	8.1	23.9	32.0	0.07	7.9	F
5th Street	II	40	20.8	2.9	23.7	0.18	27.5	C
SFRT	II	30	28.8	32.5	61.3	0.23	13.3	E
Calle Lorca	II	40	12.3	17.7	30.0	0.11	12.8	F
S. Pacheco St.	II	40	25.9	19.8	45.7	0.24	18.6	D
Total	II		95.9	96.8	192.7	0.82	15.3	E

Arterial Level of Service: WB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	29.4	46.2	0.15	11.4	F
Calle Lorca	II	40	25.9	7.9	33.8	0.24	25.1	C
SFRT	II	30	15.1	12.4	27.5	0.11	14.0	E
5th Street	II	40	24.9	0.7	25.6	0.23	31.9	B
Llano Street	II	40	20.8	3.5	24.3	0.18	26.9	C
Total	II		103.5	53.9	157.4	0.90	20.5	D

Arterial Level of Service: EB St. Michael's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	8.1	29.1	37.2	0.07	6.8	F
5th Street	II	40	20.8	12.9	33.7	0.18	19.4	D
SFRT	II	40	24.9	0.2	25.1	0.23	32.5	B
Calle Lorca	II	40	12.2	7.8	20.0	0.11	19.2	D
S. Pacheco St.	II	40	25.9	20.2	46.1	0.24	18.4	D
Total	II		91.9	70.2	162.1	0.82	18.2	D

Arterial Level of Service: WB St. Michael's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	13.1	29.9	0.15	17.6	D
Calle Lorca	II	40	25.9	13.4	39.3	0.24	21.6	D
SFRT	II	40	12.2	0.2	12.4	0.11	30.9	B
5th Street	II	40	24.9	11.6	36.5	0.23	22.3	C
Llano Street	II	40	20.8	4.0	24.8	0.18	26.3	C
Total	II		100.6	42.3	142.9	0.90	22.6	C

Arterial Level of Service: EB St. Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	9.9	24.7	34.6	0.09	9.0	F
5th Street	II	40	20.8	23.1	43.9	0.18	14.9	E
SFRT	II	40	24.9	0.2	25.1	0.23	32.5	B
Calle Lorca	II	40	12.3	18.5	30.8	0.11	12.5	F
S. Pacheco St.	II	40	26.1	20.0	46.1	0.24	18.5	D
Total	II		94.0	86.5	180.5	0.84	16.7	E

Arterial Level of Service: WB St. Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	36.8	53.6	0.15	9.8	F
Calle Lorca	II	40	26.1	13.2	39.3	0.24	21.7	D
SFRT	II	40	12.3	0.2	12.5	0.11	30.8	B
5th Street	II	40	24.9	17.5	42.4	0.23	19.2	D
Llano Street	II	40	20.8	1.3	22.1	0.18	29.5	B
Total	II		100.9	69.0	169.9	0.90	19.0	D

Arterial Level of Service: EB St Michael's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	8.1	71.8	79.9	0.07	3.2	F
5th Street	II	40	20.8	11.3	32.1	0.18	20.3	D
SFRT	II	30	28.8	136.7	165.5	0.23	4.9	F
Calle Lorca	II	40	12.3	26.2	38.5	0.11	10.0	F
S. Pacheco St.	II	40	25.9	24.0	49.9	0.24	17.0	E
Total	II		95.9	270.0	365.9	0.82	8.1	F

Arterial Level of Service: WB St Michael's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	35.4	52.2	0.15	10.1	F
Calle Lorca	II	40	25.9	18.4	44.3	0.24	19.1	D
SFRT	II	30	15.1	145.3	160.4	0.11	2.4	F
5th Street	II	40	24.9	20.5	45.4	0.23	18.0	D
Llano Street	II	40	20.8	13.7	34.5	0.18	18.9	D
Total	II		103.5	233.3	336.8	0.90	9.6	F

Arterial Level of Service: EB St. Michael's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	8.1	49.0	57.1	0.07	4.5	F
5th Street	II	40	20.8	27.6	48.4	0.18	13.5	E
SFRT	II	40	24.9	0.4	25.3	0.23	32.2	B
Calle Lorca	II	40	12.2	19.8	32.0	0.11	12.0	F
S. Pacheco St.	II	40	25.9	45.4	71.3	0.24	11.9	F
Total	II		91.9	142.2	234.1	0.82	12.6	F

Arterial Level of Service: WB St. Michael's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	37.5	54.3	0.15	9.7	F
Calle Lorca	II	40	25.9	33.6	59.5	0.24	14.3	E
SFRT	II	40	12.2	0.4	12.6	0.11	30.4	B
5th Street	II	40	24.9	23.1	48.0	0.23	17.0	E
Llano Street	II	40	20.8	4.4	25.2	0.18	25.9	C
Total	II		100.6	99.0	199.6	0.90	16.2	E

Capacity, Queue and LOS for SFRT

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1112	1123	10	9
v/c Ratio	0.25	0.25	0.11	0.10
Control Delay	3.1	1.5	61.3	61.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.1	1.5	61.3	61.1
Queue Length 50th (ft)	110	28	8	7
Queue Length 95th (ft)	123	82	27	26
Internal Link Dist (ft)	1116	484	527	214
Turn Bay Length (ft)				
Base Capacity (vph)	4487	4487	394	394
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.25	0.03	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑			↑	
Volume (veh/h)	0	1023	0	0	1033	0	0	9	0	0	8	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Adj Flow Rate, veh/h	0	1112	0	0	1123	0	0	10	0	0	9	0
Adj No. of Lanes	0	3	0	0	3	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0	0	2	0
Cap, veh/h	0	3658	0	0	3658	0	0	394	0	0	394	0
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.21	0.00	0.00	0.21	0.00
Sat Flow, veh/h	0	5421	0	0	5421	0	0	1863	0	0	1863	0
Grp Volume(v), veh/h	0	1112	0	0	1123	0	0	10	0	0	9	0
Grp Sat Flow(s),veh/h/ln	0	1695	0	0	1695	0	0	1863	0	0	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.5	0.0
Prop In Lane	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	3658	0	0	3658	0	0	394	0	0	394	0
V/C Ratio(X)	0.00	0.30	0.00	0.00	0.31	0.00	0.00	0.03	0.00	0.00	0.02	0.00
Avail Cap(c_a), veh/h	0	3658	0	0	3658	0	0	394	0	0	394	0
HCM Platoon Ratio	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.95	0.00	0.00	0.97	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.6	0.0	0.0	40.6	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.3	0.0
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	0.2	0.0	0.0	40.7	0.0	0.0	40.7	0.0
LnGrp LOS		A			A			D			D	
Approach Vol, veh/h		1112			1123			10			9	
Approach Delay, s/veh		0.2			0.2			40.7			40.7	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		32.0		98.0		32.0		98.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		27.5		93.5		27.5		93.5
Max Q Clear Time (g_c+I1), s		2.6		2.0		2.5		2.0
Green Ext Time (p_c), s		0.0		32.2		0.0		32.2

Intersection Summary	
HCM 2010 Ctrl Delay	0.5
HCM 2010 LOS	A

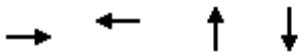
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1767	1795	13	12
v/c Ratio	0.40	0.41	0.12	0.11
Control Delay	6.1	1.3	51.2	50.9
Queue Delay	0.0	0.2	0.0	0.0
Total Delay	6.1	1.5	51.2	50.9
Queue Length 50th (ft)	243	1	9	8
Queue Length 95th (ft)	317	0	29	28
Internal Link Dist (ft)	1116	484	527	214
Turn Bay Length (ft)				
Base Capacity (vph)	4375	4375	465	465
Starvation Cap Reductn	0	1370	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.40	0.60	0.03	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑			↑	
Volume (veh/h)	0	1626	0	0	1651	0	0	12	0	0	11	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Adj Flow Rate, veh/h	0	1767	0	0	1795	0	0	13	0	0	12	0
Adj No. of Lanes	0	3	0	0	3	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0	0	2	0
Cap, veh/h	0	3398	0	0	3398	0	0	466	0	0	466	0
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.25	0.00	0.00	0.25	0.00
Sat Flow, veh/h	0	5421	0	0	5421	0	0	1863	0	0	1863	0
Grp Volume(v), veh/h	0	1767	0	0	1795	0	0	13	0	0	12	0
Grp Sat Flow(s),veh/h/ln	0	1695	0	0	1695	0	0	1863	0	0	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.5	0.0
Prop In Lane	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	3398	0	0	3398	0	0	466	0	0	466	0
V/C Ratio(X)	0.00	0.52	0.00	0.00	0.53	0.00	0.00	0.03	0.00	0.00	0.03	0.00
Avail Cap(c_a), veh/h	0	3398	0	0	3398	0	0	466	0	0	466	0
HCM Platoon Ratio	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.89	0.00	0.00	0.82	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.2	0.0	0.0	31.1	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.3	0.0
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	0.5	0.0	0.0	31.3	0.0	0.0	31.2	0.0
LnGrp LOS		A			A			C			C	
Approach Vol, veh/h		1767			1795			13			12	
Approach Delay, s/veh		0.5			0.5			31.3			31.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		32.0		78.0		32.0		78.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		27.5		73.5		27.5		73.5
Max Q Clear Time (g_c+I1), s		2.6		2.0		2.5		2.0
Green Ext Time (p_c), s		0.1		61.8		0.1		61.8

Intersection Summary	
HCM 2010 Ctrl Delay	0.7
HCM 2010 LOS	A



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1563	1551	20	20
v/c Ratio	0.35	0.35	0.20	0.20
Control Delay	0.5	0.7	63.0	63.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.5	0.7	63.0	63.0
Queue Length 50th (ft)	10	21	16	16
Queue Length 95th (ft)	12	34	44	44
Internal Link Dist (ft)	1116	482	527	214
Turn Bay Length (ft)				
Base Capacity (vph)	4499	4480	408	408
Starvation Cap Reductn	0	402	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.38	0.05	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑			↑	
Volume (veh/h)	0	1438	0	0	1427	0	0	18	0	0	18	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Adj Flow Rate, veh/h	0	1563	0	0	1551	0	0	20	0	0	20	0
Adj No. of Lanes	0	3	0	0	3	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0	0	2	0
Cap, veh/h	0	3658	0	0	3658	0	0	401	0	0	401	0
Arrive On Green	0.00	0.72	0.00	0.00	1.00	0.00	0.00	0.22	0.00	0.00	0.22	0.00
Sat Flow, veh/h	0	5421	0	0	5421	0	0	1863	0	0	1863	0
Grp Volume(v), veh/h	0	1563	0	0	1551	0	0	20	0	0	20	0
Grp Sat Flow(s),veh/h/ln	0	1695	0	0	1695	0	0	1863	0	0	1863	0
Q Serve(g_s), s	0.0	16.2	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1	0.0
Cycle Q Clear(g_c), s	0.0	16.2	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1	0.0
Prop In Lane	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	3658	0	0	3658	0	0	401	0	0	401	0
V/C Ratio(X)	0.00	0.43	0.00	0.00	0.42	0.00	0.00	0.05	0.00	0.00	0.05	0.00
Avail Cap(c_a), veh/h	0	3658	0	0	3658	0	0	408	0	0	408	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.93	0.00	0.00	0.86	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	7.4	0.0	0.0	0.0	0.0	0.0	40.4	0.0	0.0	40.4	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.6	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0	0.6	0.0
LnGrp Delay(d),s/veh	0.0	7.7	0.0	0.0	0.3	0.0	0.0	40.7	0.0	0.0	40.7	0.0
LnGrp LOS		A			A			D			D	
Approach Vol, veh/h		1563			1551			20			20	
Approach Delay, s/veh		7.7			0.3			40.7			40.7	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.5		98.5		31.5		98.5
Change Period (Y+Rc), s		3.5		* 5		3.5		5.0
Max Green Setting (Gmax), s		28.5		* 94		28.5		93.0
Max Q Clear Time (g_c+I1), s		3.1		18.2		3.1		2.0
Green Ext Time (p_c), s		0.1		53.1		0.1		60.1

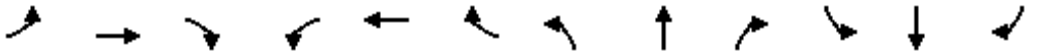
Intersection Summary	
HCM 2010 Ctrl Delay	4.5
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1112	1123	10	9
v/c Ratio	0.22	0.23	0.10	0.09
Control Delay	0.5	0.5	54.2	54.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.5	0.5	54.2	54.0
Queue Length 50th (ft)	0	0	7	6
Queue Length 95th (ft)	45	45	26	24
Internal Link Dist (ft)	1116	484	527	214
Turn Bay Length (ft)				
Base Capacity (vph)	4946	4946	448	448
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.23	0.02	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑			↑	
Volume (veh/h)	0	1023	0	0	1033	0	0	9	0	0	8	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Adj Flow Rate, veh/h	0	1112	0	0	1123	0	0	10	0	0	9	0
Adj No. of Lanes	0	3	0	0	3	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0	0	2	0
Cap, veh/h	0	4545	0	0	4545	0	0	38	0	0	38	0
Arrive On Green	0.00	0.89	0.00	0.00	0.89	0.00	0.00	0.02	0.00	0.00	0.02	0.00
Sat Flow, veh/h	0	5421	0	0	5421	0	0	1863	0	0	1863	0
Grp Volume(v), veh/h	0	1112	0	0	1123	0	0	10	0	0	9	0
Grp Sat Flow(s),veh/h/ln	0	1695	0	0	1695	0	0	1863	0	0	1863	0
Q Serve(g_s), s	0.0	3.1	0.0	0.0	3.2	0.0	0.0	0.6	0.0	0.0	0.5	0.0
Cycle Q Clear(g_c), s	0.0	3.1	0.0	0.0	3.2	0.0	0.0	0.6	0.0	0.0	0.5	0.0
Prop In Lane	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	4545	0	0	4545	0	0	38	0	0	38	0
V/C Ratio(X)	0.00	0.24	0.00	0.00	0.25	0.00	0.00	0.26	0.00	0.00	0.24	0.00
Avail Cap(c_a), veh/h	0	4545	0	0	4545	0	0	490	0	0	490	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.8	0.0	0.0	0.8	0.0	0.0	50.5	0.0	0.0	50.5	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.0	0.0	3.7	0.0	0.0	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.0	0.0	1.5	0.0	0.0	0.3	0.0	0.0	0.3	0.0
LnGrp Delay(d),s/veh	0.0	0.9	0.0	0.0	0.9	0.0	0.0	54.1	0.0	0.0	53.6	0.0
LnGrp LOS		A			A			D			D	
Approach Vol, veh/h		1112			1123			10			9	
Approach Delay, s/veh		0.9			0.9			54.1			53.6	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		6.6		98.0		6.6		98.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		27.5		93.5		27.5		93.5
Max Q Clear Time (g_c+I1), s		2.6		5.1		2.5		5.2
Green Ext Time (p_c), s		0.0		31.9		0.0		31.9

Intersection Summary	
HCM 2010 Ctrl Delay	1.3
HCM 2010 LOS	A

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1767	1795	13	12
v/c Ratio	0.36	0.36	0.11	0.10
Control Delay	0.7	0.7	45.2	45.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.7	0.8	45.2	45.2
Queue Length 50th (ft)	0	0	7	7
Queue Length 95th (ft)	85	87	28	27
Internal Link Dist (ft)	1116	484	527	214
Turn Bay Length (ft)				
Base Capacity (vph)	4924	4924	537	537
Starvation Cap Reductn	0	453	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.40	0.02	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑			↑	
Volume (veh/h)	0	1626	0	0	1651	0	0	12	0	0	11	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Adj Flow Rate, veh/h	0	1767	0	0	1795	0	0	13	0	0	12	0
Adj No. of Lanes	0	3	0	0	3	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0	0	2	0
Cap, veh/h	0	4412	0	0	4412	0	0	49	0	0	49	0
Arrive On Green	0.00	0.87	0.00	0.00	0.87	0.00	0.00	0.03	0.00	0.00	0.03	0.00
Sat Flow, veh/h	0	5421	0	0	5421	0	0	1863	0	0	1863	0
Grp Volume(v), veh/h	0	1767	0	0	1795	0	0	13	0	0	12	0
Grp Sat Flow(s),veh/h/ln	0	1695	0	0	1695	0	0	1863	0	0	1863	0
Q Serve(g_s), s	0.0	6.0	0.0	0.0	6.1	0.0	0.0	0.6	0.0	0.0	0.5	0.0
Cycle Q Clear(g_c), s	0.0	6.0	0.0	0.0	6.1	0.0	0.0	0.6	0.0	0.0	0.5	0.0
Prop In Lane	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	4412	0	0	4412	0	0	49	0	0	49	0
V/C Ratio(X)	0.00	0.40	0.00	0.00	0.41	0.00	0.00	0.27	0.00	0.00	0.25	0.00
Avail Cap(c_a), veh/h	0	4412	0	0	4412	0	0	605	0	0	605	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	1.1	0.0	0.0	1.1	0.0	0.0	40.4	0.0	0.0	40.4	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0	0.0	2.9	0.0	0.0	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	0.0	0.0	2.8	0.0	0.0	0.3	0.0	0.0	0.3	0.0
LnGrp Delay(d),s/veh	0.0	1.4	0.0	0.0	1.4	0.0	0.0	43.3	0.0	0.0	43.0	0.0
LnGrp LOS		A			A			D			D	
Approach Vol, veh/h		1767			1795			13			12	
Approach Delay, s/veh		1.4			1.4			43.3			43.0	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		6.7		78.0		6.7		78.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		27.5		73.5		27.5		73.5
Max Q Clear Time (g_c+I1), s		2.6		8.0		2.5		8.1
Green Ext Time (p_c), s		0.1		57.3		0.1		57.1

Intersection Summary	
HCM 2010 Ctrl Delay	1.7
HCM 2010 LOS	A

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1563	1551	20	20
v/c Ratio	0.33	0.32	0.17	0.17
Control Delay	1.0	1.0	50.8	50.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.0	1.0	50.8	50.8
Queue Length 50th (ft)	0	0	12	12
Queue Length 95th (ft)	69	71	38	38
Internal Link Dist (ft)	1116	482	527	214
Turn Bay Length (ft)				
Base Capacity (vph)	4791	4781	490	490
Starvation Cap Reductn	0	518	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.36	0.04	0.04

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑			↑	
Volume (veh/h)	0	1438	0	0	1427	0	0	18	0	0	18	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Adj Flow Rate, veh/h	0	1563	0	0	1551	0	0	20	0	0	20	0
Adj No. of Lanes	0	3	0	0	3	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0	0	2	0
Cap, veh/h	0	4509	0	0	4509	0	0	61	0	0	61	0
Arrive On Green	0.00	0.89	0.00	0.00	0.89	0.00	0.00	0.03	0.00	0.00	0.03	0.00
Sat Flow, veh/h	0	5421	0	0	5421	0	0	1863	0	0	1863	0
Grp Volume(v), veh/h	0	1563	0	0	1551	0	0	20	0	0	20	0
Grp Sat Flow(s),veh/h/ln	0	1695	0	0	1695	0	0	1863	0	0	1863	0
Q Serve(g_s), s	0.0	5.3	0.0	0.0	5.2	0.0	0.0	1.1	0.0	0.0	1.1	0.0
Cycle Q Clear(g_c), s	0.0	5.3	0.0	0.0	5.2	0.0	0.0	1.1	0.0	0.0	1.1	0.0
Prop In Lane	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	0	4509	0	0	4509	0	0	61	0	0	61	0
V/C Ratio(X)	0.00	0.35	0.00	0.00	0.34	0.00	0.00	0.33	0.00	0.00	0.33	0.00
Avail Cap(c_a), veh/h	0	4509	0	0	4509	0	0	503	0	0	503	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	1.0	0.0	0.0	1.0	0.0	0.0	49.9	0.0	0.0	49.9	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0	0.0	3.1	0.0	0.0	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.4	0.0	0.0	2.4	0.0	0.0	0.6	0.0	0.0	0.6	0.0
LnGrp Delay(d),s/veh	0.0	1.2	0.0	0.0	1.2	0.0	0.0	53.0	0.0	0.0	53.0	0.0
LnGrp LOS		A			A			D			D	
Approach Vol, veh/h		1563			1551			20			20	
Approach Delay, s/veh		1.2			1.2			53.0			53.0	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		7.0		98.5		7.0		98.5
Change Period (Y+Rc), s		3.5		* 5		3.5		5.0
Max Green Setting (Gmax), s		28.5		* 94		28.5		93.0
Max Q Clear Time (g_c+I1), s		3.1		7.3		3.1		7.2
Green Ext Time (p_c), s		0.1		58.1		0.1		57.9

Intersection Summary	
HCM 2010 Ctrl Delay	1.8
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Arterial Level of Service: EB St. Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	9.9	15.1	25.0	0.09	12.4	F
5th Street	II	40	20.8	5.2	26.0	0.18	25.1	C
SFRT	II	40	24.9	3.1	28.0	0.23	29.1	B
Calle Lorca	II	40	12.3	9.8	22.1	0.11	17.4	D
S. Pacheco St.	II	40	26.1	6.6	32.7	0.24	26.1	C
Total	II		94.0	39.8	133.8	0.84	22.5	C

Arterial Level of Service: WB St. Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	15.2	32.0	0.15	16.4	E
Calle Lorca	II	40	26.1	3.6	29.7	0.24	28.7	B
SFRT	II	40	12.3	1.5	13.8	0.11	27.9	C
5th Street	II	40	24.9	4.6	29.5	0.23	27.6	C
Llano Street	II	40	20.8	5.3	26.1	0.18	25.0	C
Total	II		100.9	30.2	131.1	0.90	24.6	C

Arterial Level of Service: EB St. Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	9.9	15.1	25.0	0.09	12.4	F
5th Street	II	40	20.8	5.2	26.0	0.18	25.1	C
SFRT	II	40	24.9	0.5	25.4	0.23	32.1	B
Calle Lorca	II	40	12.3	4.6	16.9	0.11	22.8	C
S. Pacheco St.	II	40	26.1	14.8	40.9	0.24	20.9	D
Total	II		94.0	40.2	134.2	0.84	22.5	C

Arterial Level of Service: WB St. Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	15.2	32.0	0.15	16.4	E
Calle Lorca	II	40	26.1	3.6	29.7	0.24	28.7	B
SFRT	II	40	12.3	0.5	12.8	0.11	30.0	B
5th Street	II	40	24.9	5.0	29.9	0.23	27.3	C
Llano Street	II	40	20.8	6.5	27.3	0.18	23.9	C
Total	II		100.9	30.8	131.7	0.90	24.5	C

Arterial Level of Service: EB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	8.1	23.9	32.0	0.07	7.9	F
5th Street	II	40	20.8	2.9	23.7	0.18	27.5	C
SFRT	II	30	28.8	6.1	34.9	0.23	23.4	C
Calle Lorca	II	40	12.3	3.0	15.3	0.11	25.1	C
S. Pacheco St.	II	40	25.9	37.1	63.0	0.24	13.5	E
Total	II		95.9	73.0	168.9	0.82	17.5	D

Arterial Level of Service: WB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	29.4	46.2	0.15	11.4	F
Calle Lorca	II	40	25.9	7.9	33.8	0.24	25.1	C
SFRT	II	30	15.1	1.3	16.4	0.11	23.4	C
5th Street	II	40	24.9	4.7	29.6	0.23	27.5	C
Llano Street	II	40	20.8	3.4	24.2	0.18	27.0	C
Total	II		103.5	46.7	150.2	0.90	21.5	D

Arterial Level of Service: EB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	8.1	23.9	32.0	0.07	7.9	F
5th Street	II	40	20.8	2.9	23.7	0.18	27.5	C
SFRT	II	30	28.8	0.7	29.5	0.23	27.6	C
Calle Lorca	II	40	12.3	9.7	22.0	0.11	17.5	D
S. Pacheco St.	II	40	25.9	18.6	44.5	0.24	19.1	D
Total	II		95.9	55.8	151.7	0.82	19.5	D

Arterial Level of Service: WB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	29.4	46.2	0.15	11.4	F
Calle Lorca	II	40	25.9	7.9	33.8	0.24	25.1	C
SFRT	II	30	15.1	0.7	15.8	0.11	24.3	C
5th Street	II	40	24.9	9.4	34.3	0.23	23.8	C
Llano Street	II	40	20.8	6.4	27.2	0.18	24.0	C
Total	II		103.5	53.8	157.3	0.90	20.5	D

Arterial Level of Service: EB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	8.1	43.3	51.4	0.07	4.9	F
5th Street	II	40	20.8	19.5	40.3	0.18	16.2	E
SFRT	II	40	24.9	1.0	25.9	0.23	31.5	B
Calle Lorca	II	40	12.2	15.4	27.6	0.11	13.9	E
S. Pacheco St.	II	40	25.9	42.9	68.8	0.24	12.3	F
Total	II		91.9	122.1	214.0	0.82	13.8	E

Arterial Level of Service: WB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	33.5	50.3	0.15	10.4	F
Calle Lorca	II	40	25.9	36.8	62.7	0.24	13.5	E
SFRT	II	40	12.2	1.0	13.2	0.11	29.0	B
5th Street	II	40	24.9	16.2	41.1	0.23	19.8	D
Llano Street	II	40	20.8	6.5	27.3	0.18	23.9	C
Total	II		100.6	94.0	194.6	0.90	16.6	E

Arterial Level of Service: EB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Llano Street	II	40	8.1	43.3	51.4	0.07	4.9	F
5th Street	II	40	20.8	19.5	40.3	0.18	16.2	E
SFRT	II	40	24.9	1.0	25.9	0.23	31.5	B
Calle Lorca	II	40	12.2	15.4	27.6	0.11	13.9	E
S. Pacheco St.	II	40	25.9	42.9	68.8	0.24	12.3	F
Total	II		91.9	122.1	214.0	0.82	13.8	E

Arterial Level of Service: WB St Micheal's Dr.

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
S. Pacheco St.	II	40	16.8	33.5	50.3	0.15	10.4	F
Calle Lorca	II	40	25.9	36.8	62.7	0.24	13.5	E
SFRT	II	40	12.2	1.0	13.2	0.11	29.0	B
5th Street	II	40	24.9	16.2	41.1	0.23	19.8	D
Llano Street	II	40	20.8	6.5	27.3	0.18	23.9	C
Total	II		100.6	94.0	194.6	0.90	16.6	E

Appendix C

Excerpt from Pedestrian Study of Rail Trail Crossing at St. Michaels Drive

PEDESTRIAN STUDY OF RAIL TRAIL CROSSING AT ST. MICHAEL'S DRIVE
City of Santa Fe Traffic Engineering Division
Study date: August 10-11, 2011

INTRODUCTION:

- The purpose of this study is to examine existing safety conditions at the intersection of the Rail Trail and St. Michael's Drive. The study includes looking at vehicular volumes, pedestrian/bicycle volumes and measuring available gaps for pedestrians.

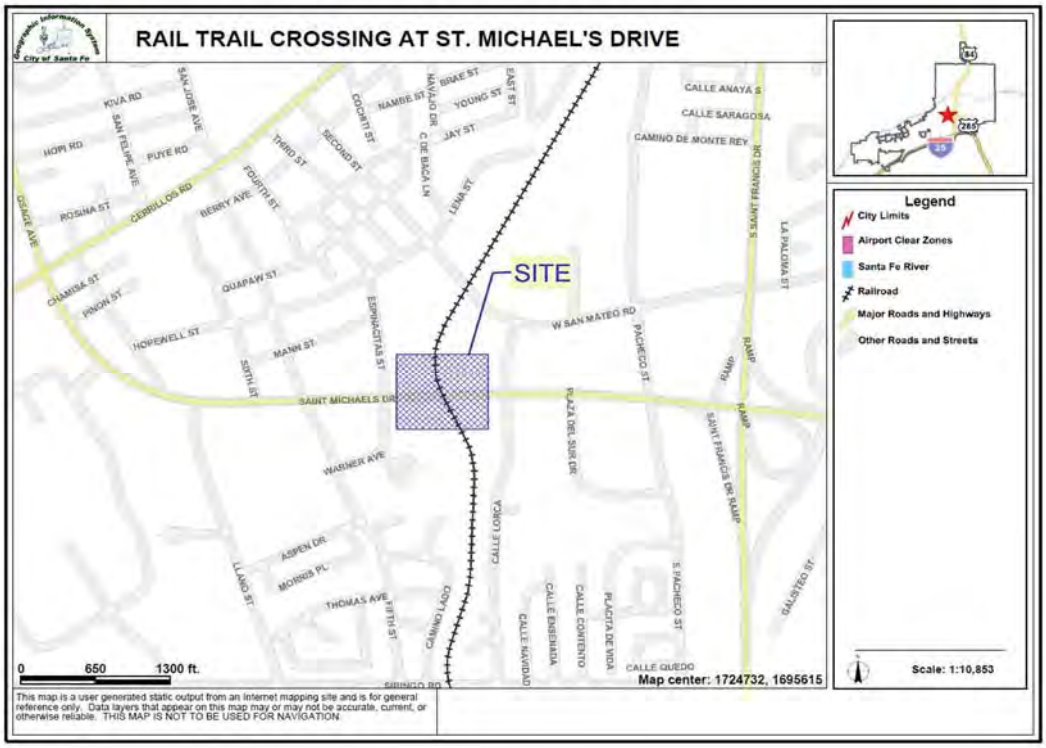


EXHIBIT 1. VICINITY MAP

SITE DATA:

- This site is located on St. Michael's Drive between St. Francis Drive and Cerrillos Road (see Exhibit 1, above).
- The major roadway, St. Michael's Drive runs east-west at this location; while the Rail
  Trail intersects this road at close to perpendicular (see Exhibit 2, page 2).
- The posted speed limit on St. Michael's Drive in this location is 40 mph.
- The nearest traffic signal to the east is 580 ft. away at Calle Lorca. To the west the nearest signal is at Fifth Street and is 1185 ft. from the Rail Trail Crossing.
- The Annual Average Daily Traffic (AADT) on St. Michael's Drive is 25,472 vehicles per day per SFMPO 2011 AADT Volumes publication. (See Exhibit 3, page 2).
- The crosswalk length from curb to center median is 43 feet and crosses three lanes of traffic. The curb to curb crossing distance of all six lanes is 102 ft.
- The median is about 16-18 ft. wide, and serves as a pedestrian refuge between the eastbound and westbound directions of vehicles.

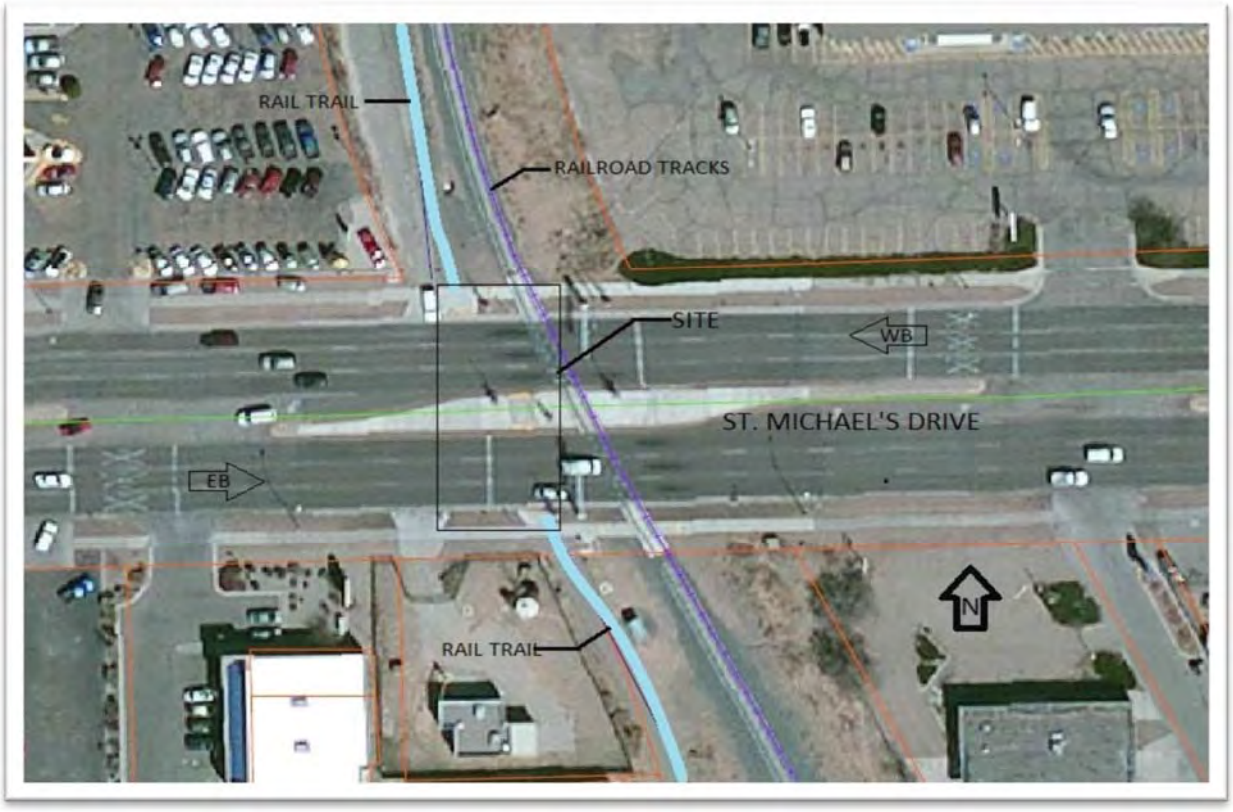


EXHIBIT 2. AERIAL MAP.

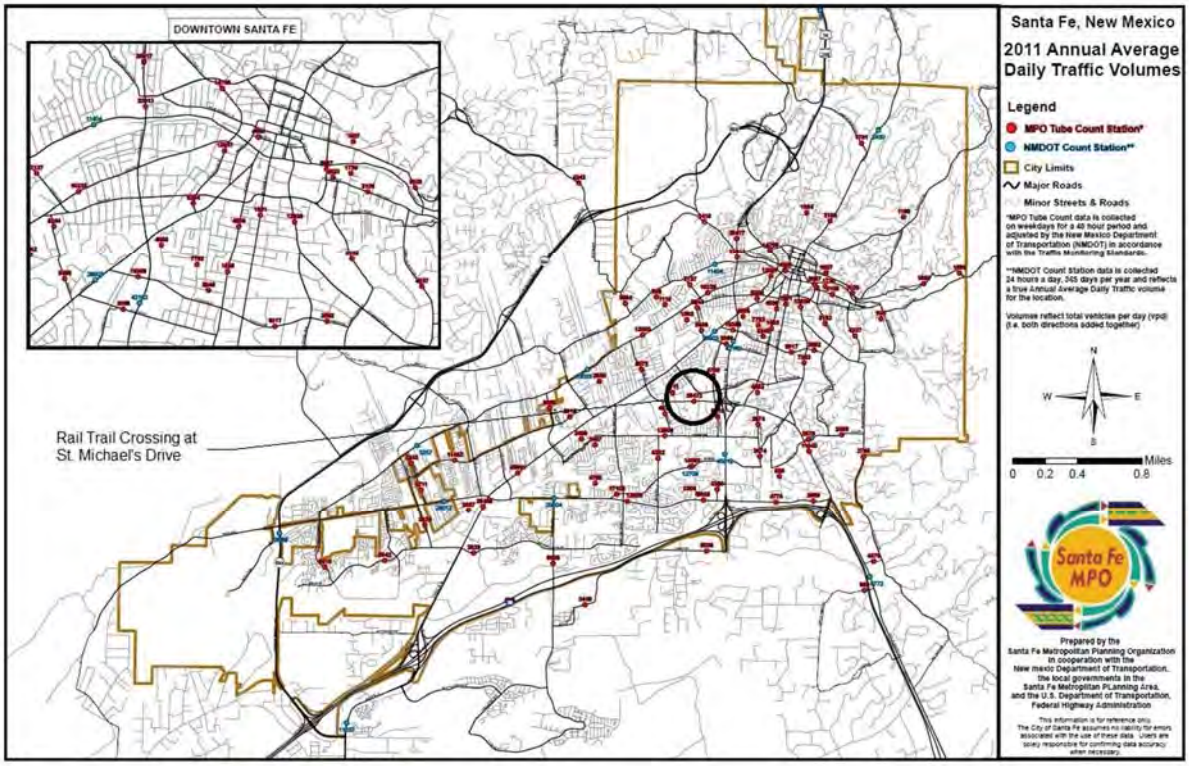


EXHIBIT 3. SFMPO 2011 AADT MAP.

METHODOLOGY:

1) DATA COLLECTION:
   - Pedestrians and bicyclists were counted separately, and then summed for the total volume of trail users.
   - Vehicular counts were collected via tube counts during the same two day period of time that the gap studies and pedestrian/bicycle counts were completed; see volume tabulation in Exhibit 4, below:

VEHICULAR AND PEDESTRIAN VOLUMES DURING PEAK HOURS - CROSSING FULL WIDTH OF ST. MICHAEL'S DRIVE - A CROSSING LENGTH OF 102 FEET.

RAIL TRAIL CROSSING AT ST. MICHAEL'S DRIVE

START TIME	VEHICLE VOLUME			RAIL TRAIL - PED/BIKE VOLUME			
	TWO DIR VOLUME		PEAK HOUR OF MAJOR ROAD	COMBINED PED-BIKE VOL		AVG VOL TAKEN OVER 2 DAYS	HIGHER VOLUME TAKEN OVER 2 DAYS.
	DATES			08/10/2011	08/11/2011		
	08/10/11	08/11/11	AVG	TOTAL	TOTAL		
07:00 AM	110	120	115	6	8		
07:15 AM	149	154	152	5	5		
07:30 AM	205	186	196	22	6		
07:45 AM	216	207	212	4	13		
08:00 AM	298	308	303	6	2		
08:15 AM	362	325	344	9	2		
08:30 AM	339	313	326	8	3		
08:45 AM	336	321	329	7	4		
AM PEAK HOUR	1335	1267	***1301***	30	11	***21***	*30*
11:30 AM	470	512	491	7	11		
11:45 AM	563	532	548	9	9		
12:00 PM	543	557	550	17	5		
12:15 PM	620	552	586	4	9		
12:30 PM	627	599	613	5	6		
12:45 PM	602	559	581	3	5		
01:00 PM	581	554	568	6	8		
01:15 PM	592	665	629	3	5		
NOON PEAK HOUR	2402	2377	***2390***	17	24	***21***	*24*
04:00 PM	553	529	541	4	4		
04:15 PM	557	536	547	6	4		
04:30 PM	504	498	501	1	8		
04:45 PM	510	515	513	5	8		
05:00 PM	539	489	514	8	3		
05:15 PM	559	546	553	14	6		
05:30 PM	534	539	537	9	5		
05:45 PM	551	506	529	10	7		
PM PEAK HOUR	2142	2089	***2132***	41	21	***31***	*41*

EXHIBIT 4. VOLUME TABULATION.

- Gaps and pedestrian/bicycle counts were recorded using the Jamar TDC-8 counter for three peak periods; 7-9 am, 11:30 am – 1:30 pm and 4-6 pm. Gap studies were conducted for the westbound direction on Wednesday, Aug. 10, 2011 and for the eastbound lanes on Thursday Aug. 11, 2011 (see Exhibits 5, this page and Exhibit 6, page 5).

GAP STUDY: ST. MICHAEL'S DRIVE AT THE RAIL TRAIL - EAST BOUND LANES
DATE: THURSDAY, AUGUST 11, 2011

Purpose: To study gaps in vehicluar traffic for pedestrian and bicycle users of the Rail Trail where it crosses St. Michael's Drive.

	TRAIL USERS			CARS	GAPS (SECONDS)														
Start Time	Bikes	Walkers	Total	VEH VOL	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	NO. OF GOOD GAPS
07:00 AM	4	4	8	50	2	4	3	5	3	5	2	2	3	0	2	1	2	0	7	
07:15 AM	2	3	5	69	0	2	4	5	2	6	2	1	2	1	2	0	0	1	3	
07:30 AM	5	1	6	77	0	1	2	4	7	6	0	3	2	2	1	1	0	0	2	
07:45 AM	11	2	13	85	0	8	7	6	0	2	2	0	4	0	2	1	0	1	0	
08:00 AM	2	0	2	129	1	6	6	2	4	8	1	1	1	1	1	0	0	0	3	
08:15 AM	1	1	2	154	2	5	9	3	3	6	3	2	4	0	0	0	0	0	0	
08:30 AM	3	0	3	165	3	5	4	9	3	6	1	1	5	2	2	0	1	1	1	
08:45 AM	3	1	4	152	2	4	4	3	2	5	4	0	3	0	1	0	1	0	2	
PEAK HOUR TOTALS	9	2	11	600	8	20	23	17	12	25	9	4	13	3	4	0	2	1	6	33
11:30 AM	8	3	11	225	0	2	1	3	3	3	0	0	3	0	0	0	0	0	3	
11:45 AM	6	3	9	211	0	3	2	2	3	2	3	1	1	1	1	0	0	0	2	
12:00 PM	3	2	5	217	3	4	9	6	2	2	0	0	2	1	0	0	1	0	1	
12:15 PM	6	3	9	212	3	2	2	6	2	4	2	2	0	1	0	1	0	0	1	
12:30 PM	5	1	6	231	0	1	7	3	5	2	5	3	0	1	1	0	0	0	0	
12:45 PM	5	0	5	239	2	1	6	5	3	5	1	1	2	2	0	0	0	0	1	
01:00 PM	6	2	8	238	1	4	5	3	3	4	1	1	2	2	1	1	0	0	2	
01:15 PM	3	2	5	331	2	1	7	4	4	2	2	1	0	0	0	2	1	0	2	
PEAK HOUR TOTALS	19	5	24	1039	5	7	25	15	15	13	9	6	4	5	2	3	1	0	5	26
04:00 PM	4	0	4	235	2	6	5	3	2	4	2	1	2	2	1	0	0	0	0	
04:15 PM	4	0	4	219	2	7	9	6	5	1	2	2	2	0	0	0	0	0	1	
04:30 PM	8	0	8	218	5	5	3	3	3	4	2	2	1	2	1	2	0	1	0	
04:45 PM	6	2	8	230	4	9	10	6	1	4	6	1	0	1	0	1	0	1	0	
05:00 PM	3	0	3	211	9	8	8	6	3	1	1	2	1	1	1	0	1	0	0	
05:15 PM	4	2	6	244	8	11	2	7	6	3	1	2	3	1	0	0	0	0	2	
05:30 PM	2	3	5	229	5	10	7	2	5	2	4	0	0	1	2	0	1	1	2	
05:45 PM	6	1	7	232	3	9	9	6	6	4	0	3	1	3	3	1	1	0	0	
PEAK HOUR TOTALS	15	6	21	916	25	38	26	21	20	10	6	7	5	6	6	1	3	1	4	33

COMMENTS: Start Date: 08/11/2011 Posted Speed = 40 mph Weather = rainy, warm EASTBOUND - 3 thru lanes
Site Code: 08111101; 08111102; 08111103 counter board = TDC-8 Crossing width is 43 ft.
Vehicular Volume by Tube counts 8-9-11 through 8-11-11 : Peak Hr Veh. :Peak Hr Crossers
Study date prior to the start of public school : Gaps of sufficient length

ACCEPTABLE GAP CALCULATION: G = W/S + R G = 43/3.5 + 3 = 12.3 + 3 = 15.3 ~ 16 secs. W = width = 43 ft. R= 3 sec.
S = 3.5 sec.

EXHIBIT 5. GAP STUDY - EASTBOUND LANES AUGUST 11, 2011.

GAP STUDY: ST. MICHAEL'S DRIVE AT THE RAIL TRAIL - WEST BOUND LANES
DATE: WEDNESDAY, AUGUST 10, 2011

Purpose: To study gaps in vehicluar traffic for pedestrian and bicycle users of the Rail Trail where it crosses St. Michael's Drive.

	TRAIL USERS			CARS	GAPS (SECONDS)														
Start Time	Bikes	Walkers	Total	VEH VOL	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	NO. OF GAPS = OR = 16 SECS.
07:00 AM	3	3	6	64	1	3	2	2	5	6	2	1	4	2	1	2	1	1	5	
07:15 AM	4	1	5	77	0	1	2	4	0	1	2	2	1	3	1	2	1	1	4	
07:30 AM	16	6	22	121	0	1	1	7	5	1	1	1	1	3	2	1	0	2	3	
07:45 AM	4	0	4	130	1	3	3	3	2	1	6	0	1	4	2	3	1	0	2	
08:00 AM	6	0	6	177	0	2	3	1	5	6	2	2	2	0	0	1	0	2	4	
08:15 AM	7	2	9	205	0	1	3	4	2	5	3	2	3	2	1	1	0	0	2	
08:30 AM	8	0	8	151	0	2	1	5	1	2	2	3	2	0	0	2	2	1	2	
08:45 AM	6	1	7	180	2	0	1	3	4	3	4	1	2	0	1	1	2	1	1	
PEAK HOUR TOTALS	27	3	30	713	2	5	8	13	12	16	11	8	9	2	2	5	4	4	9	43
11:30 AM	6	1	7	283	0	4	3	3	1	3	3	3	0	1	2	1	0	2	1	
11:45 AM	3	6	9	343	4	7	10	6	4	3	1	3	2	0	2	0	0	0	1	
12:00 PM	4	13	17	335	6	4	6	3	7	4	2	0	1	0	0	0	0	0	1	
12:15 PM	3	1	4	371	1	3	4	2	2	4	5	1	1	0	1	1	0	0	0	
12:30 PM	1	4	5	378	2	3	3	5	2	1	1	3	0	1	0	0	0	0	1	
12:45 PM	2	1	3	329	9	4	7	1	7	3	2	1	0	0	0	0	0	0	0	
01:00 PM	4	2	6	309	5	6	4	6	4	3	1	2	2	0	0	1	0	0	0	
01:15 PM	3	0	3	309	6	9	5	5	4	2	2	0	2	0	0	0	0	0	0	
PEAK HOUR TOTALS	11	24	35	1427	13	17	23	16	15	12	9	7	4	1	3	1	0	0	3	19
04:00 PM	2	2	4	302	3	3	4	8	5	4	2	0	3	0	1	0	0	0	1	
04:15 PM	6	0	6	311	2	12	5	3	4	2	1	2	1	1	1	1	1	0	1	
04:30 PM	1	0	1	271	3	5	8	6	5	0	1	3	0	1	0	0	0	2	2	
04:45 PM	5	0	5	297	1	5	9	7	3	1	3	1	2	1	1	0	1	0	1	
05:00 PM	4	4	8	320	7	11	8	5	3	3	2	1	2	1	0	0	0	0	0	
05:15 PM	10	4	14	323	1	2	9	1	5	4	3	1	1	0	0	0	1	0	3	
05:30 PM	6	3	9	282	1	5	2	8	0	2	2	1	2	3	3	1	0	0	1	
05:45 PM	10	0	10	283	1	4	11	5	6	3	2	1	2	0	1	3	0	0	1	
PEAK HOUR TOTALS	25	11	36	1222	10	23	28	21	11	10	10	4	7	5	4	1	2	0	5	28

COMMENTS: Start Date: 08/10/2011 Posted Speed = 40 mph Weather = clear & warm WESTBOUND - 3 thru lanes
Site Code: 08101101; 08101102; 08101103 counter board = TDC-6 Crossing width is 43 ft.

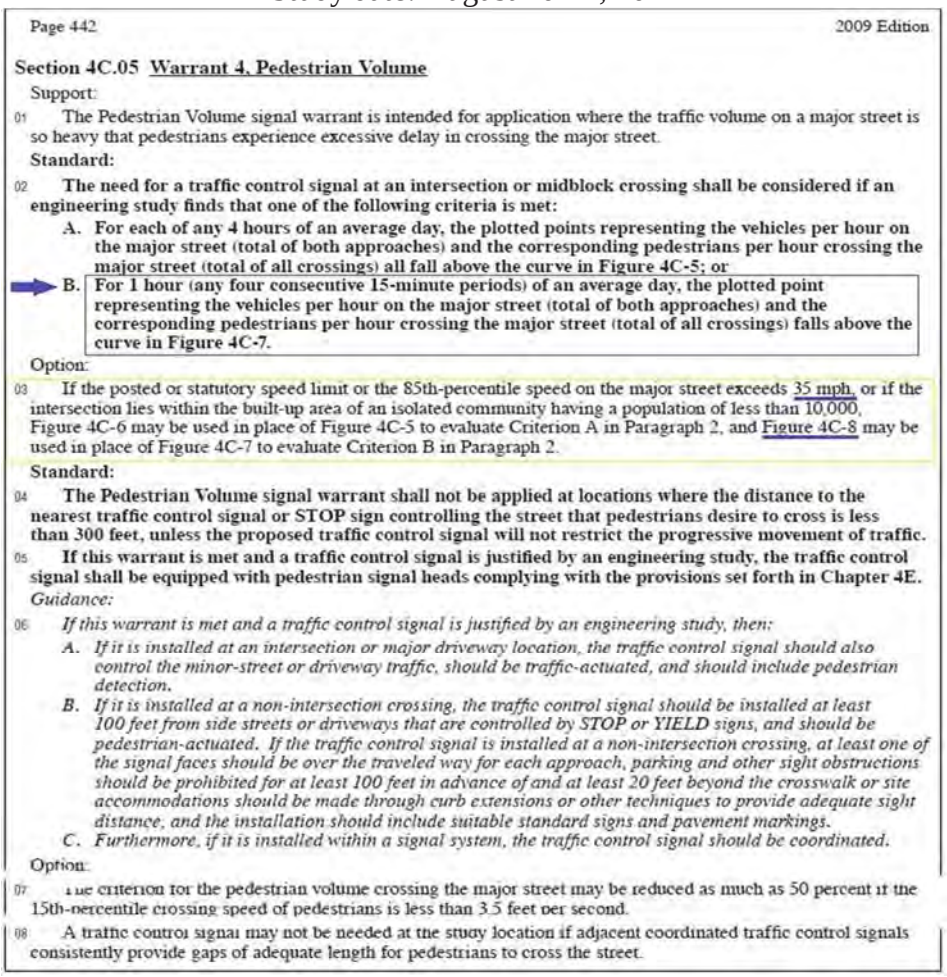
Vehicular Volume by Tube counts 8-9-11 through 8-11-11 Peak Hr of Vehicles Peak Hr of Crossers
Study date prior to the start of public school Gaps of sufficient length

ACCEPTABLE GAP CALCULATION: G = W/S + R G = 43/3.5 + 3 = 12.3 + 3 = 15.3 ~ 16 secs. W = width = 43 ft. R= 3 sec.
S = 3.5 sec.

EXHIBIT 6. GAP STUDY - WESTBOUND LANES AUGUST 10, 2011.

2) ANALYSIS:

- MUTCD Warrant #4- Pedestrian Volume was evaluated for installation of a standard Traffic Signal utilizing the criterion in section 4C.05 paragraph 02.B and 03 (see Exhibit 7, page 6.)



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Section 4C.05 Warrant 4, Pedestrian Volume

Support:

01 The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

Standard:

02 **The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:**

A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or

B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-7.

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 35 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-6 may be used in place of Figure 4C-5 to evaluate Criterion A in Paragraph 2, and Figure 4C-8 may be used in place of Figure 4C-7 to evaluate Criterion B in Paragraph 2.

Standard:

04 **The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.**

05 **If this warrant is met and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E.**

Guidance:

06 *If this warrant is met and a traffic control signal is justified by an engineering study, then:*

A. If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.

B. If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs, and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.

C. Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.

Option:

07 The criterion for the pedestrian volume crossing the major street may be reduced as much as 50 percent if the 15th-percentile crossing speed of pedestrians is less than 3.5 feet per second.

08 A traffic control signal may not be needed at the study location if adjacent coordinated traffic control signals consistently provide gaps of adequate length for pedestrians to cross the street.

EXHIBIT 7. MUTCD SECTION 4C.05 WARRANT 4. PEDESTRIAN VOLUME (TRAFFIC SIGNALS)

- Minimum Gap time (time required for a pedestrian to cross) is calculated-at right, (per Manual of Transportation Engineering Studies, 2nd edition, ITE, pages 248-250).

G = W/S + (N-1)H +R

Where G = minimum safe gap in traffic in sec.
W = Crossing distance
S = walking speed ft./sec. (3.5)
N = number of rows of pedestrians (1)
H = headway (0)
R =Pedestrian reaction and startup time in sec. (3)

G = 43/3.5 + 3 = 15.3 sec. Rounded to 16 sec.

G = 16 sec.

- Pedestrian Hybrid Beacon Warrant: Data was analyzed that compared Vehicles per Hour versus Pedestrians (sum of bicyclists +pedestrians) for 3 peak hour periods; AM, Midday and PM, in accordance with Sections 4F.01.07 4F.01.08 and Figure 4F-2 of the 2009 MUTCD, pages 509-510.

RESULTS:

- **MUTCD Signal warrant #4:** This warrant is not met due to lower than required Pedestrian volumes per MUTCD Chapter 4; the plotted points fall below the minimum threshold line in the Exhibit below:

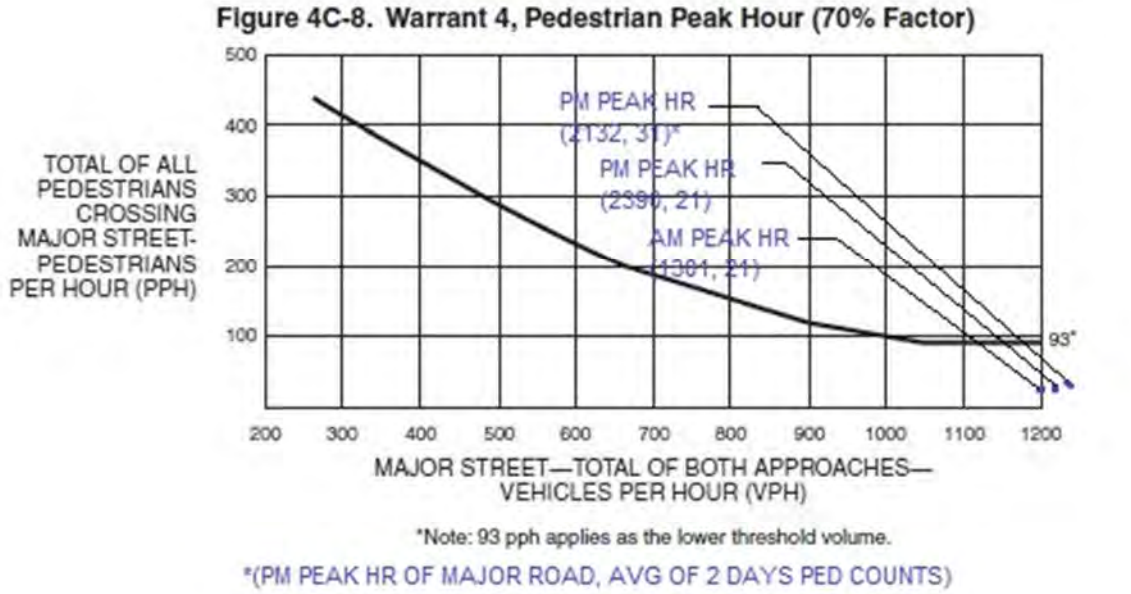


EXHIBIT 8. MUTCD FIGURE 4C-8

- **Gap Study:** During the highest peak hour, there were no more than 43 gaps of sufficient length for pedestrians. The Manual of Transportation Engineering Studies recommends a standard traffic signal if there are less than 60 gaps per hour and the pedestrian volume warrants a signal. In this case, the volume of Pedestrians does not meet this particular warrant (see Exhibits 5 and 6).

- **Pedestrian Hybrid Beacon Warrant:**
  The Pedestrian Hybrid Beacon warrant is met for the full crossing length (102 ft.) during all peak hours. This is illustrated by the plotted points that are above the interpolated red line for the crossing length as illustrated in Exhibit 9, MUTCD Fig 4F-2 on page 8.

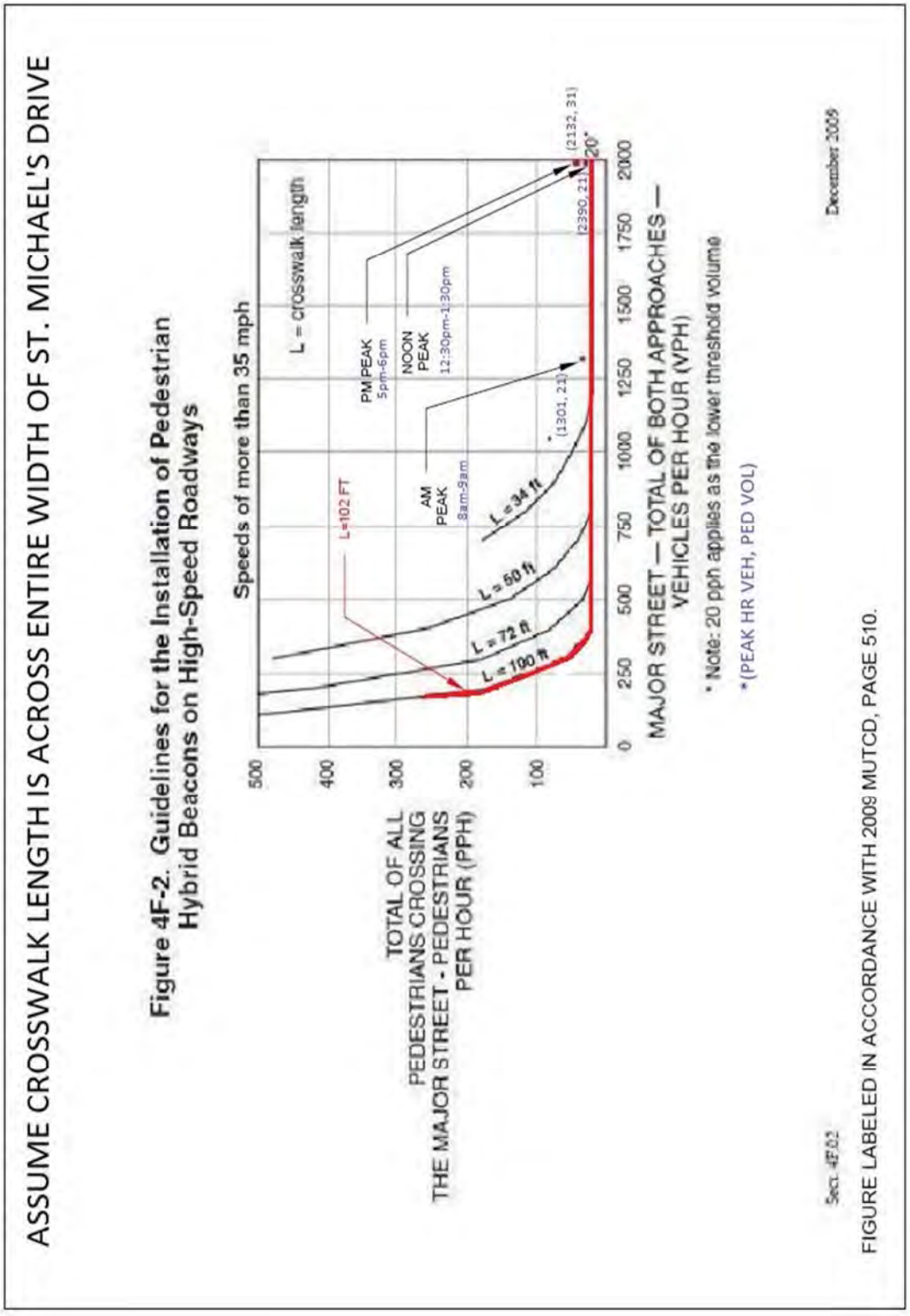


EXHIBIT 9. MUTCD FIG. 4F-2: ASSUMING CROSSING LENGTH IS 102 FT. = FULL WIDTH OF ST. MICHAEL'S DRIVE. WARRANT FOR PEDESTRIAN HYBRID BEACON IS MET DURING ALL PEAK PERIODS OF THE MAJOR ROAD.

RECOMMENDATIONS:

- The results of this study show that although a standard traffic signal is not warranted; the number of gaps is less 60 per hour; the posted speed of vehicular traffic on St. Michael's Drive is 40 mph; and the pedestrian volumes are greater than the minimum threshold to satisfy the Pedestrian Hybrid Beacon Warrant at this location.
- To improve safety, a Hybrid Pedestrian Beacon should be installed at the Rail Trail Crossing at St. Michael's Drive.

Appendix D

FHWA & FRA Guidance Letters

U.S. Department
of Transportation
Federal Highway Administration

1200 New Jersey Ave., SE
Washington, D.C. 20590

JUL 21 2010

In Reply Refer To:
HOTO-1

Joe Olson, P.E.
Traffic Engineer
City of Fort Collins
P.O. Box 580
Fort Collins, CO 80522-0580

Dear Mr. Olson:

Thank you for your June 24 letter requesting an interpretation of various sections of the 2009 edition of the MUTCD. You asked six specific questions, for which we provide our answers and/or interpretations of the applicable MUTCD provisions below:

1. Do the definition of a traffic control signal in Section 1A.13 and Paragraph 4 of Section 8C.09, when taken together, recommend that a Pedestrian Hybrid Beacon be provided with preemption if it is located within 200 feet of a highway-rail grade crossing?

   FHWA response: A Hybrid Beacon is defined in Section 1A.13 as a "special type of beacon" rather than a special type of traffic control signal. Therefore, neither a Pedestrian Hybrid Beacon (PHB) nor an Emergency-Vehicle Hybrid Beacon (EVHB) is considered to be a traffic control signal. Accordingly, the Guidance in Paragraph 4 of Section 8C.09 technically does not apply to a PHB or EVHB. However, because both of these types of hybrid beacons function somewhat similar to a traffic control signal once the hybrid beacon has been activated from a dark condition by a pedestrian or emergency vehicle actuation, stopping vehicular traffic for a certain time interval, the operation of a hybrid beacon can create safety concerns if it backs up traffic across the highway-rail grade crossing. Preemption as discussed in Section 8C.09 is intended to ameliorate such concerns. Therefore, it is our interpretation that hybrid beacons located within 200 feet of a highway-rail grade crossing equipped with a flashing-light signal system should be provided with preemption.

2. Is a "flashing-light signal" used at a highway-rail grade crossing in accordance with Part 8 of the MUTCD considered to be a traffic control signal, in which case its display of flashing red indications simultaneously with the display of circular yellow or circular green signal

indications by an adjacent traffic control signal would be in violation of Paragraph 11 of Section 4D.05?

FHWA response: Flashing-light signals are defined in Section 1A.13 as "warning devices" and, as such, they are not considered to be traffic control signals. Therefore, the operation of such red flashing-light signals at a grade crossing simultaneously with the circular green or circular yellow indications of an adjacent traffic control signal is not a violation of paragraph 11 of Section 4D.05.

3. Is a pedestrian-actuated flashing yellow beacon considered to be a traffic control signal, in which case its flashing yellow indications displayed simultaneously with the display of flashing red signal indications by an adjacent flashing-light signal at a grade crossing would be in violation of Paragraph 11 of Section 4D.05?

   FHWA response: A flashing yellow beacon, deployed as a Warning Beacon, Intersection Control Beacon, or Speed Limit Sign Beacon, is a beacon and is not a traffic control signal, because it does not alternately direct traffic to stop and permit traffic to proceed. A flashing yellow beacon is merely a warning device. Also, our response to your Question 2 above explained that flashing-light signals at grade crossings are also not considered to be traffic control signals. Therefore, the operation of a flashing yellow beacon adjacent to a grade crossing simultaneously with the display of the flashing red indications of an adjacent flashing-light signal is not a violation of Paragraph 11 of Section 4D.05.

4. Would a PHB displaying flashing yellow or steady yellow indications adjacent to a grade crossing with an activated flashing-light signal system (both visible to an approaching road user) be a violation of Paragraph 11 of Section 4D.05?

   FHWA response: As noted in our response to Question 1 above, PHBs are not considered to be traffic control signals. As noted in our response to Question 2 above, "flashing-light signals" are "warning devices" and, as such, they are not considered to be traffic control signals. Therefore, the operation of flashing-light signals (or the operation of flashing red lights on a gate) at a grade crossing simultaneously with the circular yellow indications of an adjacent PHB or EVHB is not a violation of Paragraph 11 of Section 4D.05.

5. Other than Section 8C.09 and Section 4C.27, is there anything else in the MUTCD that would preclude or limit the operation of any of the following directly adjacent to a grade crossing equipped with a flashing-light signal system: a) a traffic control signal, b) a PHB, or c) a flashing yellow beacon?

   FHWA response: Each of the cases is discussed individually as follows:

   a) Only the provisions of Sections 8C.09 and 4D.27 would impact the operation of a traffic control signal adjacent to a grade crossing with flashing-light signals.

b) There are no restrictions in Sections 8C.09, 4D.27, or anywhere else in the MUTCD that preclude or limit the operation of a flashing yellow beacon directly adjacent to a grade crossing with flashing-light signals.

c) See our response to Question 1 above in regard to the applicability of Paragraph 4 of Section 8C.09 to PHBs and EVHBs. Section 4D.27 does not in itself require or recommend preemption (it is Section 8C.09 where the provision of preemption is discussed). However, if preemption of a PHB or EVHB is provided at a given location, then the provisions of Section 4D.27 concerning sequences, transitions, and other aspects of the preemption operation would apply. The reason Section 4D.27 applies in such cases is that, even though hybrid beacons are defined as beacons rather than traffic control signals, Paragraph 1 of Section 4F.02 requires PHBs to comply with the provisions of Chapter 4D, and Paragraph 3 of Section 4G.04 requires compliance of EVHBs with applicable provisions elsewhere in the MUTCD, including Chapter 4D.

6. Is there anything in Chapter 4D that precludes the use of a protected right-turn green arrow simultaneously with a permissive left-turn (circular green or flashing yellow arrow) on the opposite approach?

   FHWA response: Section 4D.05, Paragraph 3, Item F.1 states that a steady GREEN ARROW signal indication "shall be displayed only to allow vehicular movements, in the direction indicated, that are not in conflict with other vehicles moving on a green or yellow signal indication and are not in conflict with pedestrians crossing in compliance with a WALKING PERSON (symbolizing WALK) or flashing UPRAISED HAND (symbolizing DONT WALK) signal indication." It further states that "vehicles departing in the same direction shall not be considered in conflict if, for each turn lane with moving traffic, there is a separate departing lane, and pavement markings or raised channelization clearly indicate which departure lane to use." This language therefore precludes the simultaneous display of a green right-turn arrow for one approach and either a steady circular green or a flashing yellow left-turn arrow (and also during the steady yellow change interval that follows either the circular green or flashing yellow arrow) for a permissive left-turn movement on the opposing approach, unless both the right-turn and opposing left-turn movements have separate departing lanes into which to turn and pavement markings or raised channelization clearly indicate which departure lane to use.

Thank you for writing on these subjects. We hope that our interpretations answer your questions. For the next edition of the MUTCD, we will consider proposing revisions to the Section 1A.13 definitions of "beacon," "highway traffic signal," and "traffic control signal" to more clearly and accurately reflect the intended application of provisions such as those you questioned.

If you have any questions, please contact Mr. Wainwright by e-mail at **scott.wainwright@dot.gov** or by telephone at 202-366-0857. Please note that we have assigned your request the following official interpretation number and title: "4(09)-2(I)—Hybrid Beacons Adjacent to Grade Crossings." Please refer to this number in any future correspondence regarding this issue.

Sincerely yours,

Mark R. Kehrli
Director, Office of Transportation Operations

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

FEB 19 2015

Mr. William E. Craven
Rail Bureau Manager
New Mexico Department of Transportation
P.O. Box 1149
Santa Fe, NM 87504

Dear Mr. Craven:

This reply is in response to your December 8, 2014, letter to the Federal Railroad Administration (FRA) regarding the use of a HAWK signal adjacent to the St. Michaels Drive grade crossing location (US DOT Number 013815N) in Santa Fe, NM. The proposed HAWK signal would serve the pedestrians and cyclists crossing the roadway via the Santa Fe Rail Trail.

FRA has completed its review and is of the opinion that using a HAWK signal in close proximity to an automatic highway-rail crossing warning device is not preferred or endorsed. This type of signaling system may cause confusion to the driver—not knowing whether a train or a pedestrian is approaching.

In addition, a HAWK signal at this intersection may promote drivers to disregard the flashing red lights and warning devices. Drivers are allowed to stop then proceed during the red flash mode of a HAWK signal once the pedestrian clears the roadway. However, drivers must remain stopped during the entire sequence of the railroad warning flasher lights.

FRA recommends that a standard highway traffic signal, which is activated by the trail user and properly interconnected to the automatic railroad warning devices, be used. This eliminates any confusion to the motorist as it is the most commonly used traffic control device and is much more effective in stopping vehicles.

If you have any questions or need further clarification, please contact Mr. Ron Ries, Staff Director, Highway-Rail Crossing and Trespass Programs Division. Mr. Ries may be reached at (202) 493-6285 or at Ronald.Ries@dot.gov.

Sincerely,

Robert C. Lauby
Associate Administrator for Railroad Safety
Chief Safety Officer

cc: Mr. Frank Sharpless, New Mexico Department of Transportation
Mr. Rob Fine, New Mexico Department of Transportation
Mr. Afshin Jian, New Mexico Department of Transportation

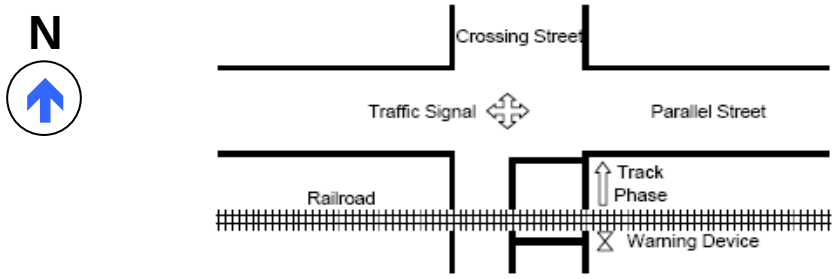
Appendix E

Rail Preemption Calculation Sheets

Minnesota Department of Transportation
GUIDE FOR DETERMINING TIME REQUIRMENTS FOR TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS
(Operations Sheet)

City: Los Lunas
County: Valencia
District: District 3

Date: 2/3/2015
Completed by: Lee Engineering
District Approval:



Parallel Street Name: SFRT

Crossing Street Name: St. Micheals Drive

Railroad: BNSF/Rail Runner
Crossing DOT#:

Railroad Contact:
Phone:

SECTION 1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

Preempt verification and response time

			Remarks
1. Preempt delay time (sec)	1.	0.0	
2. Controller response time to preempt (sec)	2.	0.0	Controller type: ASC/2
3. Preempt verification and response time (sec): add lines 1 and 2	3.	0.0	

Worst-case conflicting vehicle time

			Remarks
4. Worst-case conflicting vehicle phase number(s)	4.	4/8	
5. Minimum green time during right-of-way transfer (sec)	5.	0.0	Set in preemptor settings
6. Other green time during right-of-way transfer (sec)	6.	0.0	
7. Yellow change time (sec)	7.	4.0	Use front page values
8. Red clearance time (sec)	8.	1.0	Use front page values
9. Worst-case conflicting vehicle time (sec): add lines 5 through 8	9.	5.0	

Worst-case conflicting pedestrian time

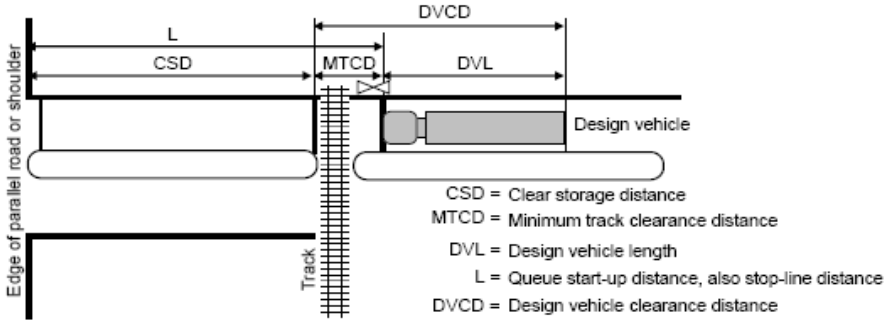
			Remarks
10. Worst-case conflicting pedestrian phase number(s)	10.	0	
11. Minimum walk time during right-of-way transfer (sec)	11.	0.0	
12. Pedestrian clearance time during right-of-way transfer (sec)	12.	0.0	Use front page values
13. Vehicle yellow change time, if not included on line 12 (sec)	13.	0.0	Use front page values
14. Vehicle red clearance time, if not included on line 12 (sec)	14.	0.0	Use front page values
15. Worst-case conflicting pedestrian time (sec): add lines 11 through 14	15.	0.0	

Worst-case conflicting vehicle or pedestrian time

16. Worst-case conflicting vehicle or pedestrian time(sec): maximum of lines 9 and 15	16.	5.0

17. Right-of-way transfer time (sec): add lines 3 and 16..... 17. 5.0

SECTION 2: QUEUE CLEARANCE TIME CALCULATION



Remarks

18. Clear storage distance (CSD, feet)..... **18.** 0

19. Minimum track clearance distance (MTCD, feet)..... **19.** 180

20. Design vehicle length (DVL, feet)..... **20.** 74

by:

date:

Design vehicle type: WB-65

21. Queue start-up distance (L, feet): add lines 18 and 19..... **21.** 180

Remarks

22. Time required for design vehicle to start moving (sec): calculated as 2+(L/20)..... **22.** 11.0

23. Design vehicle clearance distance (DVCD, feet): add lines 19 and 20..... **23.** 254

24. Time for design vehicle to accelerate through the DVCD (sec)..... **24.** 22.6 Read from Figure 2 in instructions

25. Queue clearance time (sec): add lines 22 and 24..... 25. 33.6

SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION

Remarks

26. Right-of-way transfer time (sec): line 17..... **26.** 5.0

27. Queue clearance time (sec): line 25..... **27.** 33.6

28. Desired minimum separation time (sec)..... **28.** 4.0

29. Maximum preemption time (sec): add lines 26 through 28..... 29. 42.6

SECTION 4: SUFFICIENT WARNING TIME CHECK

Remarks

30. Required minimum time (MT, sec), per regulations..... **30.** 20

31. Additional clearance time (CT, sec): get from railroad..... **31.** 15 Excludes buffer time (BT)

32. Minimum warning time (WT, sec): add lines 30 and 31..... **32.** 35 Excludes buffer time (BT)

33. Advance preemption time (APT, sec), if provided: get from railroad..... **33.** 0

34. Warning time provided by railroad (sec): add lines 32 and 33..... **34.** 35

35. Additional warning time required from railroad (sec): subtract line 34 from line 29, round up to nearest full second; enter zero (0) if less than zero..... 35. 7.6

If the additional warning time required (line 35) is greater than zero, additional warning time has to be requested from the railroad. Alternatively, the maximum preemption time (line 29) may be decreased after performing an engineering study to investigate the possibility of reducing the values on lines 1, 5, 6, 7, 8, 11, 12, 13 and 14.

Remarks:

SECTION 5: TRACK CLEARANCE GREEN TIME CALCULATION (OPTIONAL)

Preempt Trap Check

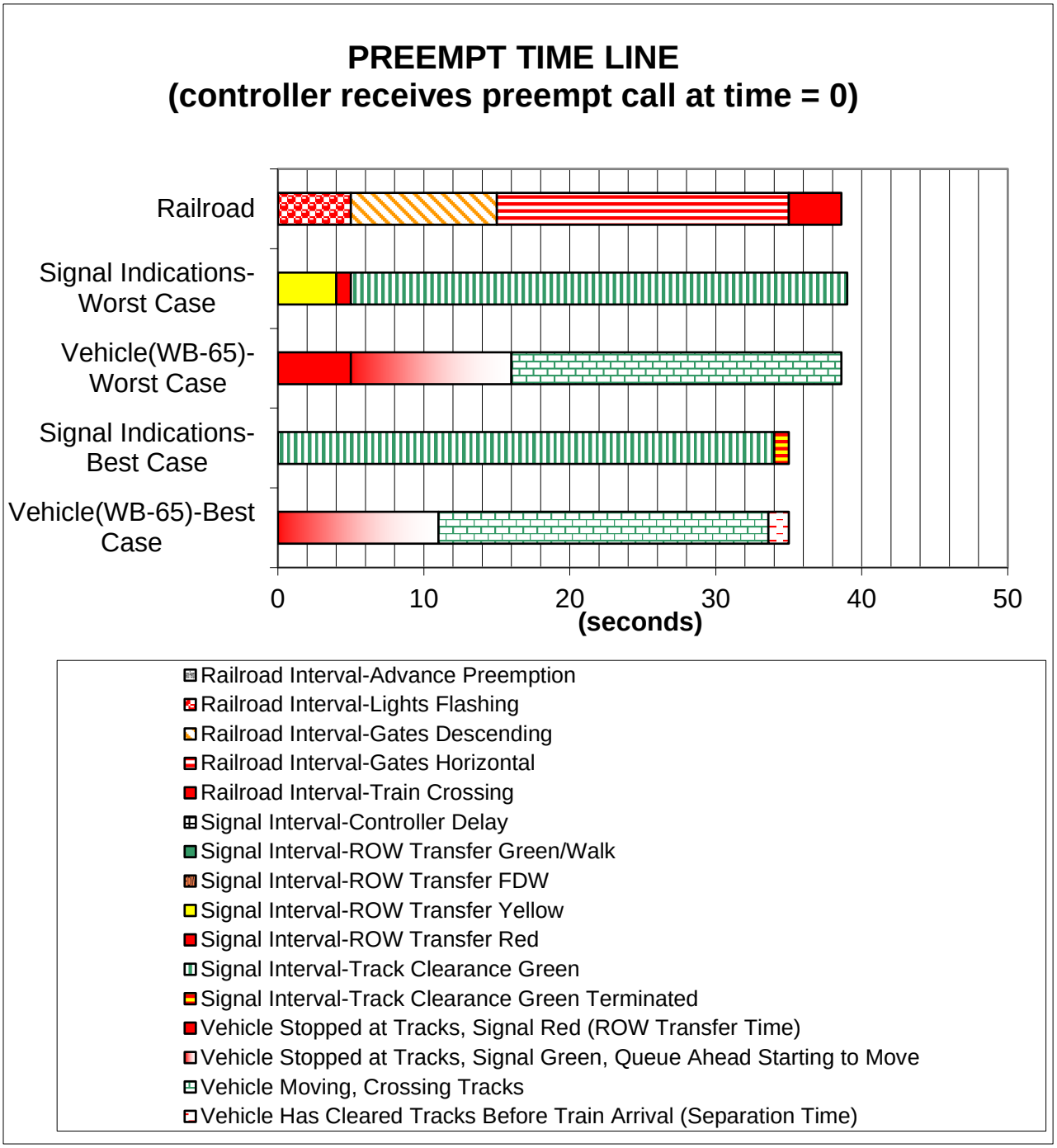
36. Advance preemption time (APT) provided (sec): line 33.....	**36.**	0	Line 33 only valid if line 35 is zero.	
37. Multiplier for maximum APT due to train handling.....	**37.**	1.00	See Instructions for details.	
38. Maximum APT (sec): multiply line 36 and 37.....	**38.**	0.0		**Remarks**
39. Minimum duration for the track clearance green interval (sec).....	**39.**	15.0		
40. Gates down after start of preemption (sec): add lines 38 and 39.....	**40.**	15.0		
41. Preempt verification and response time (sec): line 3.....	**41.**	0.0		**Remarks**
42. Best-case conflicting vehicle or pedestrian time (sec): usually zero (0).....	**42.**	0.0		
43. Minimum right-of-way transfer time (sec): add lines 41 and 42.....	**43.**	0.0		
44. Minimum track clearance green time (sec): subtract line 43 from line 40.....	**44.**	15.0		

Clearing of Clear Storage Distance

45. Time required for design vehicle to start moving (sec): line 22.....	**45.**	11.0		
46. Design vehicle clearance distance (DVCD,feet): line 23.....	**46.**	254		**Remarks**
47. Portion of CSD to clear during track clearance phase green (fe	**47.**	0		Clear full CSD
48. Design vehicle relocation distance (DVRD,feet): add lines 46 and 47.....	**48.**	254		
49. Time required for design vehicle to accelerate through DVRD (sec).....	**49.**	22.6	Find in Figure 2 and Table 2	
50. Time to clear portion of clear storage distance (sec): add lines 45 and 49.....	**50.**	33.6		
51. Track clearance green interval (seconds): maximum of lines 44 and 50, round up to nearest full second.....	**51.**	34		

SECTION 6: VEHICLE-GATE INTERACTION CHECK (OPTIONAL)

52. Right-of-way transfer time (sec): line 17.....	**52.**	5.0		
53. Time required for design vehicle to start moving (sec): line 22.....	**53.**	11.0		
54. Time required for design vehicle to accelerate through DVL (on line 20, sec).....	**54.**	12.2	Find in Figure 2 and Table 2	
55. Time required for design vehicle to clear descending gate (sec): add lines 52 through 54.....	**55.**	28.2		
				Remarks
56. Duration of flashing lights before gate descent start (sec): get from railroad.....	**56.**	5.0		Field observation
				Remarks
57. Full gate descent time (sec): get from railroad.....	**57.**	10.0		Field observation
58. Proportion of non-interaction gate descent time.....	**58.**	0.42	Read from Figure 5	
59. Non-interaction gate descent time (sec): multiply lines 57 and 58.....	**59.**	4.2		
60. Time available for design vehicle to clear descending gate (sec): add lines 56 and 59.....	**60.**	9.2		
61. Advance preemption time (APT) required to avoid design vehicle-gate interaction (sec): subtract line 60 from line 55, round up to nearest full second, enter zero (0) if less than zero.....	**61.**	19		



WARNINGS:

In worst case scenario, train arrives before design vehicle clears tracks.

In best case scenario, gates begin descending before design vehicle moves.

In best case scenario, separation time is shorter than desired.

Appendix F

Engineers Opinion on Probable Construction Cost

ST. MICHAEL'S UNDERPASS
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
CONCEPTUAL DESIGN

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
203000	UNCLASSIFIED EXCAVATION	C.Y.	4,900	$ 6.00	$ 29,400.00
206000	UNSTABLE MATERIAL EXCAVATION	C.Y.	200	$ 11.00	$ 2,200.00
207000	SUBGRADE PREPARATION	S.Y.	2,310	$ 1.25	$ 2,887.50
303000	BASE COURSE	TON	320	$ 18.00	$ 5,760.00
407000	ASPHALT MATERIAL FOR TACK COAT	TON	0.4	$ 480.00	$ 192.00
408100	PRIME COAT MATERIAL	TON	1.8	$ 490.00	$ 882.00
416000	MINOR PAVING	S.Y.	960	$ 20.00	$ 19,200.00
511030	STRUCTURAL CONCRETE, CL AA	C.Y.	510	$ 520.00	$ 265,200.00
515000	REINFORCED CONCRETE FOR MINOR STRUCTURES	C.Y.	660	$ 745.00	$ 491,700.00
540060	REINFORCING BARS GR 60	LB	155,720	$ 1.00	$ 155,720.00
570024	24" CULVERT PIPE	L.F.	40	$ 75.00	$ 3,000.00
603280	SWPPP MANAGEMENT	L.S.	1	$ 5,000.00	$ 5,000.00
607079	PEDESTRIAN/BICYCLE RAILING	L.F.	1990	$ 76.00	$ 151,240.00
608004	CONCRETE SIDEWALK 4"	S.Y.	1,260	$ 50.00	$ 63,000.00
608206	CONCRETE MEDIAN PAVEMENT 6"	S.Y.	65	$ 40.00	$ 2,600.00
609324	CONCRETE SLOPED CURB AND GUTTER 8" X 32"	L.F.	50	$ 18.00	$ 900.00
609318	CONCRETE SLOPED CURB AND GUTTER 6" X 18"	L.F.	50	$ 40.00	$ 2,000.00
61000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	1	$ 18,800.00	$ 18,800.00
618000	TRAFFIC CONTROL MANAGEMENT	L.S.	1	$ 40,700.00	$ 40,700.00
621000	MOBILIZATION	L.S.	1	$ 135,500.00	$ 135,500.00
702610	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	2	$ 8,000.00	$ 16,000.00
702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	L.S.	1	$ 67,800.00	$ 67,800.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	L.S.	1	$ 27,100.00	$ 27,100.00
802000	POST CONSTRUCTION PLANS	L.S.	1	$ 4,000.00	$ 4,000.00
901000	CONTRACTOR PROCESS QUALITY CONTROL	L.S.	1	$ 5,000.00	$ 5,000.00
--	SIGNING AND STRIPING	L.S.	1	$ 5,000.00	$ 5,000.00
--	REMOVE AND REPLACE RAILROAD SIGNAL	L.S.	1	$ 50,000.00	$ 50,000.00
--	UTILITY RELOCATIONS	L.S.	1	$ 10,000.00	$ 10,000.00
--	WATER LINE RELOCATIONS	L.S.	1	$ 10,000.00	$ 10,000.00
--	SANITARY SEWER RELOCATIONS	L.S.	1	$ 20,000.00	$ 20,000.00
--	STORM DRAIN RELOCATIONS	L.S.	1	$ 15,000.00	$ 15,000.00
				SUBTOTAL	**$ 1,625,781.50**

DESIGN CONTINGENCY (25%)		$406,445.38
SUBTOTAL	$	2,032,226.88
E & C (10%)	$	203,222.69
SUBTOTAL	$	2,235,449.56
SUBTOTAL ROUNDED	**$**	**2,235,500.00**

Appendix F

Summary of Desktop Biological and Cultural Review

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

8801 JEFFERSON NE BUILDING B |Albuquerque, New Mexico| 505-821-4700

TECHNICAL MEMORANDUM

To: Mr. Paul Barricklow, P.E.
Principal
Lee Engineering, LLC
8220 San Pedro Drive NE
Suite 150
Albuquerque, NM 87124

From: Parametrix

Date: March 24, 2015

RE: Cultural Resources Analysis of Santa Fe Trail Underpass at St. Michael's Drive

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RESULTS

Parametrix cultural resources staff conducted a records search of the New Mexico Cultural Resource Inventory System (NMCRIS) database to obtain information on all previously recorded archaeological sites and surveys located within the proposed project area – that is, areas within, and to the north and southwest, of St. Michael's Drive in Santa Fe, NM. Current listings of the National Register of Historic Places and the New Mexico State Register of Cultural Properties were also consulted to determine the presence of historic properties and/or districts within the study area. The purpose of these record searches was to determine the location of known cultural resources that might be affected by future construction activities within the project area.

Records searches revealed that six cultural resource surveys have been conducted within or in the immediate vicinity of the proposed project area between 1994 and 2014 (Figure 1). Of this total, four surveys encompassed or overlapped the project area (Table 1), and two investigations were situated entirely outside the proposed project corridor (Table 2). Archaeological surveys carried out beyond the project area proper include NMCRIS Activity Numbers 103998 and 131018, which were undertaken northwest of the project area's northern terminus, at a distance of approximately 441 feet (ft) (134.41 meters [m]), and 602 ft (183.49 m), respectively. The six surveys were associated with investigations relating to highway/transportation infrastructure, proposed public trail developments, New Mexico Rail Runner improvements and geotechnical studies, and communications infrastructure enhancement.

The only historic property recorded in the project area during the course of these surveys was the rail line for the former Atchison Topeka and Santa Fe Railroad (now the BNSF Railway), documented as New Mexico Historic Cultural Property Inventory (HCPI) Number 31944.

Because the latest survey to be conducted in the project area (NMCRIS 103205) was completed less than 10 years ago (in 2007) and encompasses the current proposed project area, there is no immediate requirement for an additional survey of this parcel (*New Mexico Archaeological Council, Title 4, Chapter 10, Part 15, 4.10.15.9 D*). However, the previously recorded historic property (HCPI 31944) should be revisited and the recording updated, and an assessment made of potential effects that may result from the proposed undertaking.

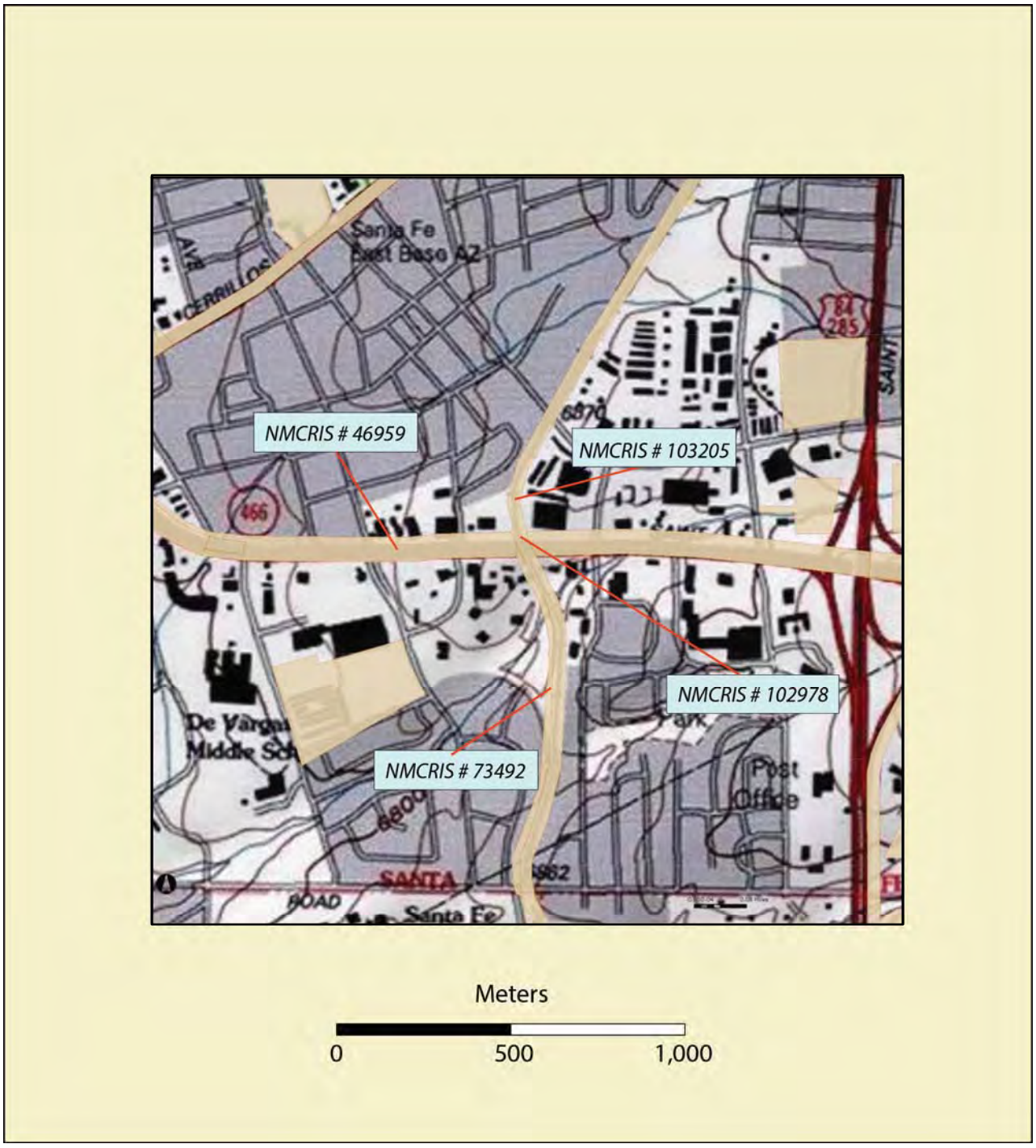

Figure 1. Four Archaeological Surveys with Associated NM Cultural Resource Inventory Systems (NMCRIS) Numbers in the Vicinity of the Proposed Project

Table 1. Previous Investigations within the Project Area

NMCRIS No.	Organization	Year	Acres Surveyed
46959	NM State Highway and Transportation Department	1994	26.0
73492	Parsons Brinckerhoff	2002	7.0
102978	Parsons Brinckerhoff	2007	0.63
103205	Parsons Brinckerhoff	2007	1653.0

Table 2. Previous Investigations in the Immediate Vicinity of the Project Area

NMCRIS No.	Organization	Year	Acres Surveyed
103998	Ron Winters	2014	0.01
131018	Michael Brandman Associates c/o Antigua Archaeology	2014	0.5

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

8801 JEFFERSON NE BUILDING B |Albuquerque, New Mexico| 505-821-4700

TECHNICAL MEMORANDUM

To: Mr. Paul Barricklow, P.E.
Principal
Lee Engineering, LLC
8220 San Pedro Drive NE
Suite 150
Albuquerque, NM 87124

From: Parametrix

Date: March 24, 2015

RE: Preliminary Environmental Analysis of Santa Fe Trail Underpass at St. Michael's Drive

---

INTRODUCTION

Parametrix Environmental Specialist, Jenny Lisignoli, conducted a review of existing environmental data for the Santa Fe Trail Underpass at St. Michael's Drive, Santa Fe, New Mexico. The proposed project involves constructing a tunnel (i.e., large concrete box culvert or large corrugated metal pipe) under St. Michael's Drive. The project would improve safety and decrease travel delays for pedestrians and bicyclists, who currently must cross St. Michael's drive at the surface intersection (Souder-Miller 2014). Federal and state listed species for Santa Fe County and waters of the United States were reviewed to determine what environmental impacts may occur due to this project. Habitat in the proposed project is classified as urban in mixed coniferous forest (USGS 2015). An existing report "*St. Francis Drive Through the City of Santa Fe Corridor Study Detailed Evaluation of Alternatives Project No. Nh-084-2(12)161 Cn D5sf3"* was prepared In April 2010 (Bohannan Huston et al. 2010) for the New Mexico Department Of Transportation Northern Design Bureau, and concluded that proposed projects within this area would cause minimal affects to biological resources, due to the urbanization of this area.

FEDERAL AND STATE LISTED SPECIAL STATUS SPECIES

Federal and state listed threatened and endangered species were identified for the proposed project area. The Information, Planning and Conservation System (IPAC) [USFWS 2015a] was utilized to obtain federally listed species and the New Mexico Game and Fish Department (NMDGF) Biota System of New Mexico (NMDGF 2015) site was utilized to determine state listed species. Species discussed in this report are protected under Section 7 of the Endangered Species Act.

Three federally listed species have the potential to occur within the proposed project area, based on the IPAC search. These include the Southwestern willow flycatcher (*Empidonax traillii extim*us), Mexican spotted owl (*Strix occidentalis lucida*), and yellow-billed cuckoo (*americanus*). The Southernwestern willow flycatcher and the yellow-billed cuckoo require riparian habitat to facilitate foraging and breeding. The Mexican spotted owl utilizes old-growth forests. No riparian habitat or old-growth forest occur within the proposed project area, and there are no records that these federally listed species have utilized the proposed project area (eBird 2015). It is unlikely that these federal species would occur in the proposed project area.

There are 15 state listed species for Santa Fe County including 12 avian species, two mammal species and 1 mollusk species (Table 1). Species evaluated included all the threatened and endangered species listed by the State of New Mexico (New Mexico Department of Game and Fish (NMDFG 2015). Of those 15, one species, the peregrine falcon, has been documented throughout Santa Fe (eBird 2015), and has the potential to forage in the proposed project area.

Table 1. State listed species that could potentially occur in the project area

Species – Common name (scientific name)	State Status
Avian species	
Baird's sparrow (*Ammodramus bairdii*)	Threatened
Bald Eagle (*Haliaeetus leucocephalus*)	Threatened
Boreal owl (*Aegolius funereus*)	Threatened
Gray vireo (*Vireo vicinior*)	Threatened
Peregrine (Falco peregrinus) and Arctic peregrine (*Falco peregrinus tundruis*)	Threatened
Violet-crowned Hummingbird (*Amazillia violiceps*)	Threatened
Least tern (*Sternula antillarum*)	Endangered*
Southwestern willow flycatcher (*Empidonax traillii extimus*)	Endangered*
White-tailed ptarmigan (*Lagopus leucura*)	Endangered
Mammal species	
American Marten (*Martes americana*)	Threatened
Spotted bat (*Euderma maculatum*)	Threatened
Mollusk species	
Lilleborg's peaclam (*Pisidium lilljeborgi*)	Threatened

*Federal and state listed endangered species

MIGRATORY BIRD TREATY ACT AND THE GOLDEN AND BALD EAGLE PROTECTION ACT

Most birds are protected under the Migratory Bird Treaty Act (MBTA). The golden eagle (*Aquila chrysaetos*) and the bald eagle (*Haliaeetus leucocephalus*) are protected under both the MBTA and the Bald and Golden Eagle Protection

Act (BGEPA). Trees in proximity to the proposed project area could potentially be used as nesting sites for avian species during the breeding season. A pre-construction nest survey would be required to comply with the MBTA, should construction occur within the breeding season (April through September annually). Bald eagles are a state listed threatened species for Santa Fe County, New Mexico. However, no bald eagles have been documented in proximity to the proposed project area (eBird 2015).

CRITICAL HABITAT

No critical habitat occurs within the proposed project area. The nearest critical habitat (for the Mexican spotted owl) occurs approximately 9.5 miles to the northeast of the project area (USFWS 2015b) [Figure 1].

ENDANGERED VEGETATIVE SPECIES

Four state endangered plant species are listed for Santa Fe County (Table 2). Of these four species one plant, the Santa Fe Cholla, could potentially occur in the proposed project area. However photographs of the proposed project indicate no cholla are present.

Table 2. New Mexico Endangered Plants in Santa Fe County, New Mexico

Species – Common name (scientific name)	Potential for occurring in proposed project area
Gooding's onion (*Allium goodingii*)	Documented in shaded canyon bottoms of climax conifer forests and in mountain meadows at an elevation of 8,000 ft. No known habitat for this species occurs within the proposed project area.
Lady tresses Orchid (*Spiranthes magnicamporium*)	In New Mexico this species is associated with riparian wetland sites at elevation up to 6233 ft. No known habitat for this species occurs within the proposed project area.
Santa Fe Cholla (*Cylindropuntia viridiflora*)	This species is known to occur only in New Mexico in gravelly rolling hills in piñon-juniper woodland from 5,800 to 7,200 ft. In recent years this species has been documented in Santa Fe in Cross of the Martyrs Park, several miles north of the proposed project area, and scattered in gardens and lots in Santa Fe, and in Pojoaque area. However, no cholla are observed in photos of the proposed project area and it is unlikely that Santa Fe cholla occurs in the proposed project area.
Wood lily (*Lilium philadelphium*)	This species occurs in rich humus soils in deciduous forests openings and prairies up to 8,859 ft. No known habitat for this species occurs within the proposed project area.

Figure 1. Project Location and Nearest Critical Habitat and Waterways to the Proposed Project Area

WATERS AND WETLANDS OF THE UNITED STATES

A Topographic map of the proposed project area, United States (U.S.) Geological Survey National Hydrography Dataset (NHD) and National Wetland Inventory (NWI) were reviewed to determine whether any jurisdictional waters of the U.S. are located within the proposed project area (see Figure 1). Railroad tracks cross over Arroyo de Los Chamisos, designated a historic wetland by the National Wetlands Inventory (USFWS 2015c), 0.1 miles to the south of the proposed project area. No state or federally listed avian species have been recorded as utilizing this site (eBird 2015). The nearest perennial stream, the Santa Fe River, is located approximately 2 miles north of the proposed project area.

NATURAL RESOURCES SUMMARY

Three federally listed species, the Mexican spotted owl, Southwestern willow flycatcher, and the yellow-billed cuckoo are listed by the USFWS (2015a) as having the potential to occur within the proposed project area; however, no habitat for these species currently exists within the site and no recorded observations of these species have been documented for this site (eBird 2015). Mexican spotted owl critical habitat is approximately 9.5 miles to the northeast. Fifteen state listed species have the potential to occur in Santa Fe County. One species, the peregrine falcon, has the potential to forage in the proposed project area and has been documented in Santa Fe in recent years (eBird 2015). Pre-construction nest surveys are recommended, in order to comply with the MBTA, should construction occur within the breeding season (April through September annually).

One state endangered vegetative species, the Santa Fe cholla, has been observed in recent years within the city of Santa Fe, scattered in lots and gardens. However, photographs of the proposed project area indicate that no cholla are present on the site, and Santa Fe cholla are unlikely to occur. Railroad tracks cross over Arroyo de Los Chamisos, designated a historic wetland by the National Wetlands Inventory (USFWS 2015c), 0.1 miles to the south of the proposed project area.

REFERENCES

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Appendix H

Response to Comments Letter

ARIZONA
TEXAS
NEW MEXICO
OKLAHOMA

August 19, 2015

Afshin Jian, PE
NMDOT State Traffic Engineer

Re: St. Michael's Road Safety Audit (RSA) Comment Responses and Revisions

Mr. Jian,

Please find the attached signed and stamped Final copy of the traffic study for the subject project. We have responded and/or addressed the following comments:

1. Why does the draft St. Michaels Drive report spend so much time evaluating a pedestrian hybrid beacon? I thought the February 15, 2015 letter from the Federal Railroad Administration (attached) put an end to that evaluation. There's no mention whatsoever of that letter or FRA's opposition to a hybrid beacon in the draft report. This needs to be noted in both the Executive Summary and in the discussion in the main body of the report. The FRA letter, which directly addresses this location, should also be included in the appendices.

   Per the scoping meeting for this project, it was our understanding among the attending stakeholders that the Pedestrian Hybrid Beacon should be fully investigated, including pros and cons, for this study. Additionally it should be noted that while the Federal Railroad Administration does not prefer or endorse such installations near rail road signals, the Federal Highway Administration does not say that such an installation is a violation of the 2009 MUTCD. Therefore it would seem that further analysis and investigation is warranted on a case by case basis until it is mandated that such signal control devices are not allowed at rail signals. Additional text has been added to the Executive Summary and page 26 of the report noting the Federal Rail Administration's opposition to such installations and a copy of the letter has been included in Appendix D)

2. In the discussion of the pedestrian tunnel, the lateral offset of the tunnel is presumed to be 35' from the centerline of the track, but no justification is provided for selecting this distance. As noted in Figure 18b this would result in the elimination of the driveway on the north side of the tracks, which is not desirable. A tunnel that exits closer to the tracks on the north side of St. Michaels, perhaps aligned as shown in the second attachment, is desirable. This would enable the connection to the sidewalk on the north side of St. Michaels Drive (the "North Access Trail" in Figure 18b) to be west of the tunnel/cut, and the restaurant driveway could be west of that but still within the ROW. The driveway would be narrowed north of St. Michaels Drive so that no vehicles could park in that section (currently, vehicles can and sometimes do park along the entire length of the driveway from the restaurant to St. Michaels Drive).

   The underpass structure was situated approximately 35 feet west of the tracks for three reasons, as follows:

   a. For constructability to minimize impacts to the track during construction.
   b. To reduce or eliminate the effects of the track loading on the structure.
   c. To avoid the control bungalow on the south side of St. Michael's.

   North of St. Michael's, the width between the track centerline and the property line west of the service road is 50 feet. As illustrated in the attached figure, a 12-14 foot service road could be

maintained if the trail were moved to within 10 feet of the track centerline. This would still allow the desired separation between the track and underpass structure for constructability and track loading considerations, but would result in impacts to the bungalow on the south side of St. Michael's. Note the following regarding the conceptual layout:

d. We maintained a tangent alignment of the trail through the underpass structure to maintain visibility through the structure, which is desirable from a security standpoint.
e. We were not able to identify a minimum allowable offset from the track centerline and the edge of trail. Based on other locations along the rail trail corridor, 10 feet appeared to be the smallest offset currently in place. Whether this is allowable will need to be further investigated during the design phase.
f. The orientation of the St. Michael's Drive access trail and the underpass could be reversed from what is shown in the attached figure, with the trail west of the underpass. This would potentially result in greater impacts to the tracks during construction, the need for a more stout design for the underpass structure due to the track loading, and the relocation of the control bungalow. All of these would most likely increase the project costs.
g. We were not able to identify ownership of the service road by reviewing right-of-way maps and the Santa Fe County Assessor's website data. Further research during the design phase will be required to determine this.

Prior to moving forward with design of the underpass with a 12-14 foot width for the service road, or no service road at all as originally illustrated, the suitability of either approach would need to be confirmed with the service road owner and the City.

3. On page vi, in second bullet under "Cons" it should state in first sentence that it is the PHB signal and the railroad signal that are similar. Existing text does not mention railroad signals until the fourth sentence.

   The text has been revised to more clearly define the comparison of the two control signals.

4. On page 4, it would be more appropriate to state in the first line of text that the railroad is "managed" by Rio Metro rather than "operated" by Rio Metro, especially since the next line states that Herzog operates and maintains the line.

   The requested text revision has been made, which is reflected in the final report.

5. On page 47, can a brief description of the lighting in the St. Francis Drive trail undercrossing be included? It is difficult to discern the lighting fixtures in the photograph. It appears these are ceiling-mounted along the centerline of the tunnel, but I cannot tell if the lights are fluorescent, incandescent, etc. or even if they are on in the photo. Also, the St. Francis Drive tunnel is about 40' to 50' longer than a St. Michaels Drive tunnel would need to be due to the wider median there.

   A callout has been added noting the existing lighting at the St. Francis Drive undercrossing. The intent of this section is to merely indicate that security lighting would be provided at the proposed St. Michael's site similarly to the St, Francis Drive crossing. It is understood that these crossings will likely have differing tunnel lengths/widths/heights and thus design variations in lighting needs. During design, the quantity, location and type of lighting would be identified.

Thanks for your input on this study. Please let me know if you have any further comments or questions.

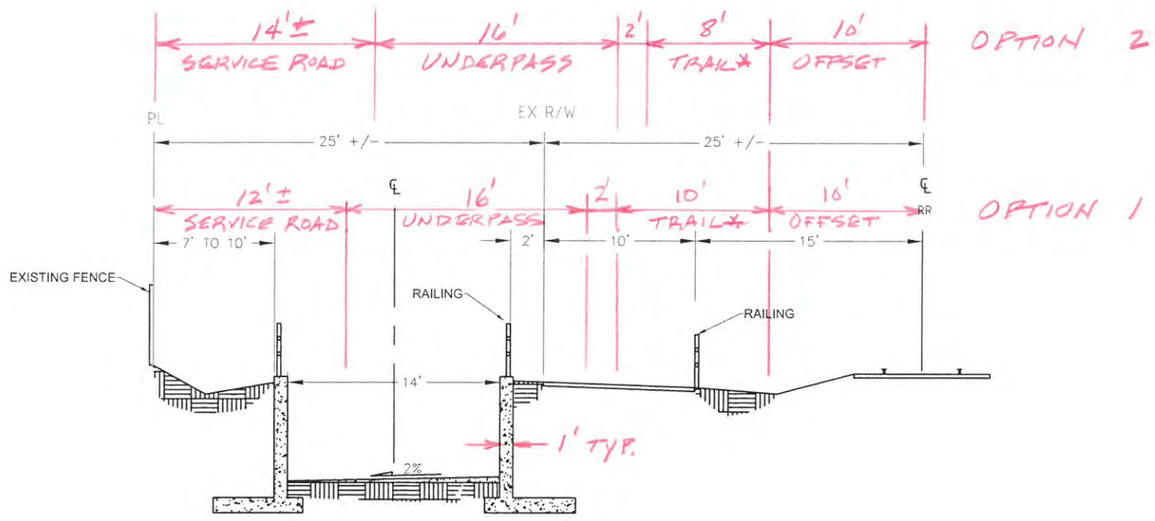
Sincerely,

Patrick Byrd, P.E. PTOE
Project Manager

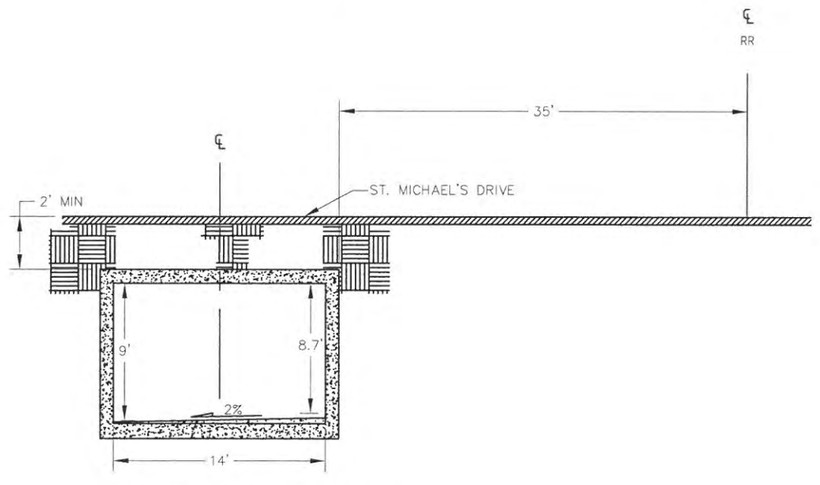
THIS FIGURE ACCOMPANIES AN EMAIL FROM J. PARKER, PARAMETRIX TO P. BYRD, LEE ENGINEERING, DATED 8/12/15.

8/12/15

OPTIONS FOR MAINTAINING SERVICE ROAD IN RESPONSE TO COMMENT FROM WILLIAM CRAVEN IN 7/29/15 EMAIL.



PROPOSED TYPICAL SECTION – 4
STA. 5+23 TO 8+52



PROPOSED TYPICAL SECTION – 3
STA. 3+67 TO 5+23

* ACCESS TRAIL TO ST. MICHAEL'S DRIVE

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ST. MICHAEL'S DRIVE
RAIL–TRAIL UNDERPASS

PROPOSED TYPICAL SECTIONS

FIGURE 18b