

TRAFFIC FORECAST AND OPERATIONS ANALYSIS

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MEMORANDUM

TO: Jason Sullivan, Senior Planner

FROM: George Smith, Senior Transportation Planner
Ryan Shea, Traffic Analyst

DATE: June 25, 2015

PROJECT #: Bonney Lake Mobility Element 610.11

SUBJECT: Traffic Forecast and Operations Analysis Methodology

Traffic Forecasts

Model Platform

The Puget South Regional Council's (PSRC) 4k Travel Model was used to prepare traffic volume forecasts for the Mobility Element of the Bonney Lake Comprehensive Plan. The 4k Travel Model is one model in the suite of tools at PSRC to analyze future travel behavior. The 4k model is a traditional Trip Based Model which was used for the most recent Transportation 2040 Plan update in 2014.

PSRC maintains a current (2010) base year model and a variety of forecast model tools. After discussion with PSRC it was determined that the 2035 LUT land use and future (2040) roadway network was the appropriate platform for the Bonney Lake travel forecast. The land use forecast products including LUT are described in the attached PSRC Forecast Products Users Guide.

The default 2035 LUT household and employment inputs were modified by the City of Bonney Lake to reflect the specific growth anticipated within the City, consistent with the other elements of the Bonney Lake Comprehensive Plan. The land use data modified by the City of Bonney Lake was sent to PSRC who used it to generate updated trip generation totals. PSRC then provided the vehicle productions and attractions reflecting the region-wide adopted totals, and updated household and employment data for Bonney Lake. This information was obtained from PSRC on March 30th, 2015.

Model Network Refinement

The existing 2010 roadway network was updated to reflect greater detail and recent improvements in the area of Bonney Lake. The following roadway improvements were added to the model network:

- 192nd Avenue E added between SR 410 and Sumner-Buckley Highway E.
 - o 1 lane each direction
 - o Capacity of 700 per lane



- o Travel speed of 35 mph
- 198th Avenue E added between SR 410 and Sumner-Buckley Highway E.
 - o 1 lane each direction
 - o Capacity of 900 per lane
 - o Travel speed of 35 mph

The forecast model network was built off of PSRC's 2040 model network obtained on March 11th, 2015. The improvements added to the 2010 network were incorporated into the 2040 network. For purposes of this analysis the 2040 network is considered to represent the "20-year" planning horizon and is appropriate for use in the 2035 horizon.

Additional improvements were added to the network received from PSRC to construct the model network with the Bonney Lake Mobility Plan improvements. The following roadway improvements were added to the 2040 network to build the Bonney Lake 2035 forecast network:

- Added 192nd Avenue E from SR 410 to 104th Street E
 - o 1 lane each direction
 - o Capacity of 900 per lane
 - o Travel speed of 25 mph
- Added capacity to 200th Avenue Court E from S Prairie Road E to 104th Avenue E
 - o 1 lane each direction added
 - o Capacity increased from 900 to 1100 per lane
- Added capacity to Church Lake Road E from Veterans Memorial Drive E to 214th Avenue E
 - o Capacity increased from 700 to 900
- Added capacity to 214th Avenue E from 96th Street E to S Prairie Road E
 - o 1 lane in each direction added
 - o Increased capacity from 900 to 1200 per lane
- Added 198th Avenue E from 104th Street E to Rhodes Lake Road E
 - o 1 lane each direction
 - o Capacity of 1100 per lane
 - o Travel speed of 35 mph
- Added capacity to 198th Avenue E from Rhodes Lake Road E to Tehaleh development
 - o Increased capacity from 500 to 1100 per lane



- Adjusted the Tehalah development Traffic Analysis Zone (TAZ) connections to the model roadway network to reflect current access expectations.

Forecast Volume Calculations

The intersection turning movement volume forecasts were generated based on the existing traffic volume counts and the traffic volume growth predicted by the travel demand model. The existing traffic volume counts were collected primarily in 2011 and 2012. The turning movement count worksheets are attached with this memorandum. The PSRC 4k model produces a three hour PM peak period. To calculate peak hour volumes from this three hour period, a peak hour percentage of 40% was assumed.

The travel model traffic volume output was post-processed to align the analysis volumes with existing “ground counts.” To produce the post-processed 2035 traffic volumes, regional, roadway and intersection growth percentages were calculated between the 2010 model volumes and the 2035 model volumes. Model growth was applied to the existing turning movement volumes to prepare 2035 forecasted volumes. The level of model detail available and correlation to ground counts was considered in determining the specific growth method applied to each study intersection. The calculations are shown in detail on the attached Traffic Volume Calculation Worksheet.

Intersection Operations Analysis

The acknowledged source for determining overall capacity for intersections is the current edition of the Highway Capacity Manual (HCM). The existing and 2035 operations analysis was performed using the Synchro/Simtraffic software package (version 8.0). This software implements the methods of the 2010 HCM. Capacity analysis results are described in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion).

The analysis was performed for the base year conditions and forecasted 2035 conditions. The 2035 analysis was prepared for geometric conditions without and with the proposed intersection improvements identified in the Mobility Plan. The level of service worksheets for the study intersections for all three scenarios are attached.

n:\projects\610 city of bonney lake\610-11 transportation element update\phase 02- transportation element update\appendix\model documentation\20150625 bonney lake model documentation.dot



PSRC Forecast Products Users Guide

User's Guide to the PSRC Forecast Products

Introduction

The Puget Sound Regional Council released an update, Maintenance Release 1 (MR1), of its forecast products package in April 2014. Maintenance Release 1 replaces the products package released in September, including both future land use alternatives: (1) the **Land Use Baseline**, and (2) the **Land Use Targets**.

This document provides a brief overview of the two datasets, discusses reasons for having two alternative products, and provides guidance on how they relate to planning projects including local comprehensive planning.

A. PSRC Forecast Products Overview

Land Use Baseline. The Land Use Baseline (originally named Land Use Forecast) is a long-range land use dataset developed using PSRC's new UrbanSim model. It represents how the regional real estate market is predicted to respond to a specified set of regulatory land use constraints and demand for new space consistent with a regional forecast of population and employment growth. The land use constraints are expressed in the model through parcel-level residential and non-residential minimum/maximum development allowances.

For the 2013 Land Use Baseline, UrbanSim utilizes land use constraints derived from local comprehensive plan designations and/or zoning regulations in effect as of December 2012. The 2013 Land Use Baseline dataset, as such, represents how regional development may occur in response to currently adopted plans and regulations.

More information on UrbanSim can be found at: <http://psrc.org/data/models/urbansim/>.

Land Use Targets. The Land Use Targets (originally named Local Targets Representation) is a long-range land use dataset designed explicitly to represent local growth targets that are adopted under state Growth Management Act requirements.¹ It is developed using a set of allocation "decision rules" that distribute jurisdictional growth targets to sub-jurisdictional zones based on (a) available net development capacities (similar to what is used for the Land Use Baseline), as well as (b) a series of policy-based preferential weights for certain zones, such as designated regional growth centers and other locally-defined activity centers.

The Land Use Targets utilizes local growth targets developed by counties and their municipalities to align with the VISION 2040 regional growth strategy. In counties where work to update local targets was still underway as of December 2013, the dataset utilized a series of placeholder growth assumptions that will be revised once target updates are completed. The 2013 Land Use Targets dataset represents a future land use scenario consistent with the policy direction and planning objectives established via the growth targets.

More information on the Land Use Targets allocation method can be found at: www.psrc.org/assets/9107/LUTMethodology.xlsx.

¹ Revised Code of Washington 36.70A

PSRC Forecast Products Comparison Table

	Land Use Baseline	Land Use Targets
What It Represents:	The region’s predicted development pattern based on current pre-VISION 2040 local comprehensive plans and development regulations (circa 2012)	A future land use and development scenario based on county/local growth targets developed to align with the VISION 2040 Regional Growth Strategy
Model:	UrbanSim	Allocation Method
Regional Forecast Assumption:	2012 Regional Economic Forecast	2005 Puget Sound Economic Forecast/ 2006 Small Area Forecast
Data Variables:	<ul style="list-style-type: none"> - Total population - Group quarter population (by institutional/non-institutional) - Household population - Households (by income quartile) - Employment (by major sectors) 	
Geography:	FAZ, TAZ, Tract, city/uninc’d urban/rural	
Base Year:	2000	2010
Interim Years:	Decadal through 2040	None
Horizon Years:	2040	2025, 2030, 2031 & 2035

How are the two products alike? Both datasets are intended to support travel modeling applications and other planning analyses. They contain the same variables at the same reporting geographies: population, household, and employment characteristics by forecast analysis zone (FAZ), and now for the first time, jurisdiction (city, unincorporated urban, rural). Other geographies (e.g., Census Tract, TAZ) are available by request.

How do the two products differ? The products are generated using different models/methods, and are available for differing interim and horizon years. Additionally, the two products are aligned with different regional forecast assumptions: the Land Use Baseline uses regional assumptions derived from PSRC’s 2012 Regional Economic Forecast, while the Land Use Targets (and its underlying county/local growth targets) reflects regional assumptions derived from PSRC’s preceding 2005 Puget Sound Economic Forecast & 2006 Small Area Forecast series. (It should be noted that the 2012 Regional Economic Forecast projects a lower long-range job growth trajectory for the region due to the impacts of the Great Recession). Lastly, and very importantly, the two datasets represent distinct future land use scenarios and underlying planning and land use assumptions.

B. Why Two Forecast Products?

City and county comprehensive plans are in a transitional period. Existing comprehensive plans include land use and planning assumptions based on the previous round of growth targets² (covering approximately the 2000s to the 2020s). A new set of growth targets (covering approximately the 2000s/2010s to the 2030s) have recently been adopted (or are being developed) and comprehensive plans will be updated to reflect these new planning assumptions.

The Land Use Baseline reflects the land use assumptions in existing, currently adopted plans and implementing regulations. Many of these plans have not yet been updated to reflect new population, housing, and employment targets as part of the 2015-2016 state-mandated local comprehensive plan update. The Land Use Targets, on the other hand, reflects recently adopted growth targets developed to align with the VISION 2040 regional growth strategy. It represents a future development scenario of how city and county comprehensive plans may be amended to accommodate the new targets.

As such, the two forecast products reflect distinctly different future land use patterns and densities. Together, they represent the range in future development outcomes that may be possible given the uncertainties inherent in forecasting. Note that a given planning project may be better served by one or the other set of planning assumptions, or perhaps both (e.g. for an alternatives analysis).

C. Using the Forecast Products

The Forecast Products can serve a wide variety of planning purposes, including comprehensive plan updates, subarea plans, utility planning, and transportation planning. Given that the two land use forecast datasets represent different planning assumptions and future scenarios, they can inform and support these planning processes in different ways. One primary planning use for the Forecasts Products is comprehensive planning under the state Growth Management Act; this is discussed in additional detail below.

Growth Management Act Requirements for Plan Consistency. The Growth Management Act (GMA) states that all elements of a comprehensive plan should be based on a consistent set of assumptions to meet the needs for future growth. The GMA specifically requires that the transportation element “is consistent with and implements the land use element,” and that it contains at least a 10-year forecast of estimated traffic resulting from land use assumptions.³ The land use assumptions used in this transportation forecast, therefore, must be consistent with the level and distribution of growth the city is planning for with its adopted growth targets.

The Growth Management Act also requires that comprehensive plans be coordinated with, and consistent with, the comprehensive plans of jurisdictions that have common borders or related regional issues.⁴ The Land Use Targets, because it is consistent with growth targets region-wide, provides a resource for a jurisdiction to model planned growth in neighboring jurisdictions.

² Growth Targets are the amount of growth a jurisdiction has agreed, through the countywide process, to plan for throughout its comprehensive plan elements over the 20-year planning horizon. (Source: PSRC Designation Procedures for New Regional Centers)

³ Revised Code of Washington 36.70A.070

⁴ Ibid, 36.70A.100

Using the Forecasts in Comprehensive Plan Updates. The two land use forecast datasets are useful resources, in different ways, for informing and supporting the comprehensive plan update process.

- **Land Use Targets:** This dataset was explicitly designed to align with jurisdictional growth targets. As such, it can provide a useful starting point for supporting a variety of technical exercises common to local comprehensive plan updates. For example, it offers TAZ-level future land use inputs for travel demand modeling applications that are consistent with (a) the primary jurisdiction’s growth targets, as well as (b) growth targets for neighboring jurisdictions and beyond.
- **Land Use Baseline:** This dataset represents forecasted outcomes based on existing land use designations and zoning. Comparing the levels and distribution of growth in the Land Use Baseline to a jurisdiction’s growth targets can illustrate the difference between (a) what the jurisdiction’s current plan is forecasted to achieve, and (b) the growth that it is required to plan for under its new growth targets. This difference could inform potential measures necessary to undertake to achieve the city’s vision under its new growth targets.

Note that jurisdictions have the flexibility to use their own future land use distributions and assumptions, or some modified version of the PSRC forecast products, so long as they meet GMA requirements for internal consistency with the adopted local growth target.

PSRC's Plan Review and Certification Program. PSRC reviews local comprehensive plans to advance coordination between local and regional planning. The review includes determination of consistency with (a) regional planning and policy, and (b) state requirements for transportation-related planning. When PSRC evaluates local comprehensive plans for certification, the inputs used for a jurisdiction’s travel demand forecast are reviewed to ensure future traffic estimates and needs are based on land use assumptions that are consistent with levels of growth reflected in adopted growth targets guiding the overall plan.

C. PSRC Support and Contact Information

This User's Guide is intended to provide users of the PSRC forecast products with the basic knowledge required to begin working with the datasets. During the transition to having two forecast products to choose from, many data users will wonder which is the most appropriate for a given planning application. PSRC staff are available to assist members and other users of the forecast products to work through questions and issues related to specific applications.

Land Use Baseline: **Mark Simonson**, Data Systems & Analysis Division
MSimonson@psrc.org
(206) 971-3273

Land Use Targets: **Rebecca Maskin**, Data Systems & Analysis Division
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(206) 464-5833

General Questions: **Carol Naito**, Data Systems & Analysis Division
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Turning Movement Count Worksheets



Prepared for: **Shea, Carr, Jewell**
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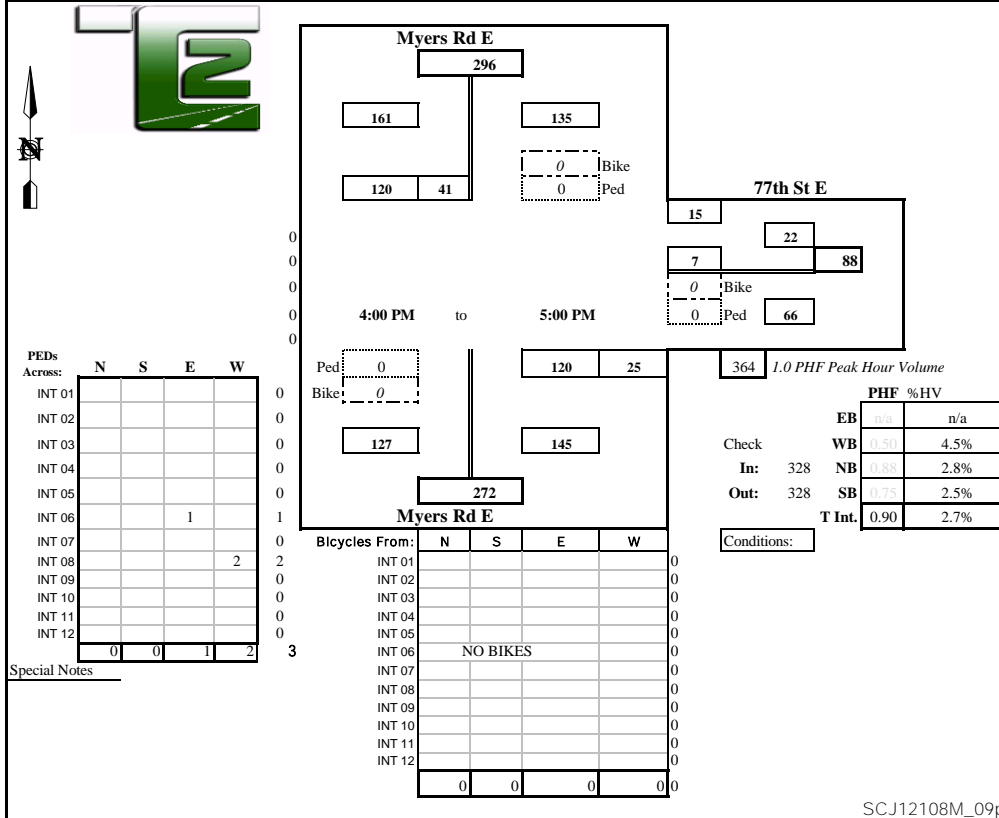
WBE/DBE

Intersection: Myers Rd E & 77th St E
 Location: Bonney Lake, Washington

Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval	From North on (SB) Myers Rd E				From South on (NB) Myers Rd E				From East on (WB) 77th St E				From West on (EB) 0				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	3	2	30	0	3	0	35	6	0	4	0	7	0	0	0	0	84
4:30 P	1	14	19	0	0	0	31	9	1	1	0	2	0	0	0	0	76
4:45 P	0	11	43	0	0	0	25	5	0	2	0	5	0	0	0	0	91
5:00 P	0	14	28	0	1	0	29	5	0	0	0	1	0	0	0	0	77
5:15 P	0	10	22	0	0	0	19	4	0	1	0	8	0	0	0	0	64
5:30 P	0	8	22	0	1	0	27	6	0	1	0	7	0	0	0	0	71
5:45 P	0	7	30	0	0	0	27	7	0	0	0	3	0	0	0	0	74
6:00 P	0	5	25	0	0	0	31	7	0	2	0	4	0	0	0	0	74
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	4	71	219	0	5	0	224	49	1	11	0	37	0	0	0	0	611
Peak Hour: 4:00 PM to 5:00 PM																	
Total	4	41	120	0	4	0	120	25	1	7	0	15	0	0	0	0	328
Approach	161				145				22				0				328
%HV	2.5%				2.8%				4.5%				n/a				2.7%
PHF	0.75				0.88				0.50				n/a				0.90





Prepared for: **Shea, Carr, Jewell**
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WBE/DBE

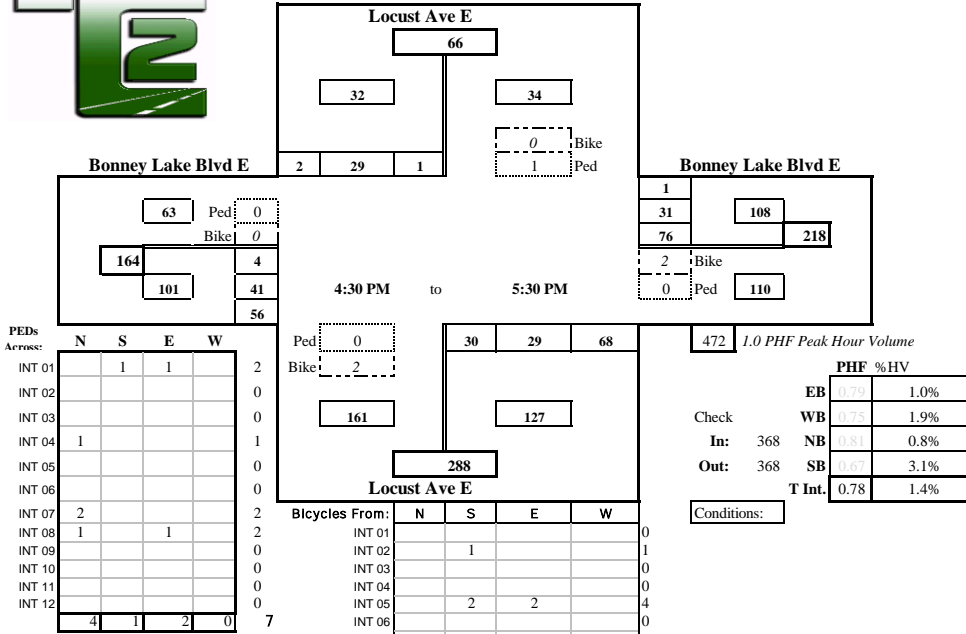
Intersection: Locust Ave E & Bonney Lake Blvd E
 Location: Bonney Lake, Washington

Date of Count: Thurs 9/13/2012
 Checked By: Jess

Time Interval Ending at	From North on (SB) Locust Ave E				From South on (NB) Locust Ave E				From East on (WB) Bonney Lake Blvd E				From West on (EB) Bonney Lake Blvd E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	0	3	0	2	4	7	12	0	15	5	0	1	1	4	15	66
4:30 P	0	1	6	1	0	5	7	13	0	19	7	0	0	0	4	15	78
4:45 P	0	0	12	0	1	10	5	14	0	12	9	1	0	2	15	12	92
5:00 P	1	1	1	0	0	8	5	15	1	22	8	0	0	1	7	9	77
5:15 P	0	0	11	0	0	5	14	20	1	27	9	0	1	1	13	18	118
5:30 P	0	0	5	2	0	7	5	19	0	15	5	0	0	0	6	17	81
5:45 P	0	1	7	1	0	6	10	24	0	11	7	0	0	4	7	8	86
6:00 P	0	0	4	0	0	5	9	20	0	13	5	0	0	2	7	11	76
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	2	3	49	4	3	50	62	137	2	134	55	1	2	11	63	105	674
Peak Hour: 4:30 PM to 5:30 PM																	

Total	1	1	29	2	1	30	29	68	2	76	31	1	1	4	41	56	368
Approach	32				127				108				101				368
%HV	3.1%				0.8%				1.9%				1.0%				1.4%
PHF	0.67				0.81				0.75				0.79				0.78



Special Notes



Prepared for: **SCJ Alliance**
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WBE/DBE

Intersection: West Tapps Hwy E & Bonney Lake Blvd
Location: Bonney Lake, Washington

Date of Count: Thurs 8/28/2014
Checked By: Jess

Time Interval Ending at	From North on (SB) West Tapps Hwy E				From South on (NB) West Tapps Hwy E				From East on (WB) 0				From West on (EB) Bonney Lake Blvd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	0	50	8	2	11	31	0	0	0	0	0	0	5	0	14	119
4:30 P	1	0	52	8	2	18	28	0	0	0	0	0	0	2	0	9	117
4:45 P	0	0	59	14	0	14	40	0	0	0	0	0	0	2	0	5	134
5:00 P	1	0	51	11	1	8	31	0	0	0	0	0	0	4	0	16	121
5:15 P	0	0	53	9	0	7	31	0	0	0	0	0	0	6	0	13	119
5:30 P	1	0	52	13	2	15	32	0	0	0	0	0	0	6	0	9	127
5:45 P	0	0	51	15	0	7	40	0	0	0	0	0	0	6	0	16	135
6:00 P	0	0	58	13	0	6	25	0	0	0	0	0	0	7	0	5	114
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	5	0	426	91	7	86	258	0	0	0	0	0	0	0	38	0	87	986
--------------	---	---	-----	----	---	----	-----	---	---	---	---	---	---	---	----	---	----	-----

Peak Hour: 4:45 PM to 5:45 PM

Total	2	0	207	48	3	37	134	0	0	0	0	0	0	0	22	0	54	502
Approach	255				171				0				76				502	
%HV	0.8%				1.8%				n/a				n/a				1.0%	
PHF	0.97				0.91				n/a				0.86				0.93	

PEDS Across:

	N	S	E	W	
INT 01	11	7	7	5	23
INT 02	8	2	4		14
INT 03	4	3			7
INT 04	16	2	5		23
INT 05	14	3	2		19
INT 06	12	1			13
INT 07	4	3	3		10
INT 08	18	3			21
INT 09					0
INT 10					0
INT 11					0
INT 12					0
Total	0	87	23	20	130

Special Notes _____

West Tapps Hwy E
411

Bonney Lake Blvd
48 | 207

West Tapps Hwy E
432

Bicycles From:

	N	S	E	W	
INT 01	1				2
INT 02	1	1			2
INT 03					0
INT 04	1			1	2
INT 05					0
INT 06	1				1
INT 07	1				1
INT 08	1				1
INT 09					0
INT 10					0
INT 11					0
INT 12					0
Total	6	1	0	2	9

540 1.0 PHF Peak Hour Volume

Check	PHF	%HV	
EB	0.86	n/a	
WB	n/a	n/a	
In: 502	NB	0.91	1.8%
Out: 502	SB	0.97	0.8%
T Int.		0.93	1.0%

Conditions: _____



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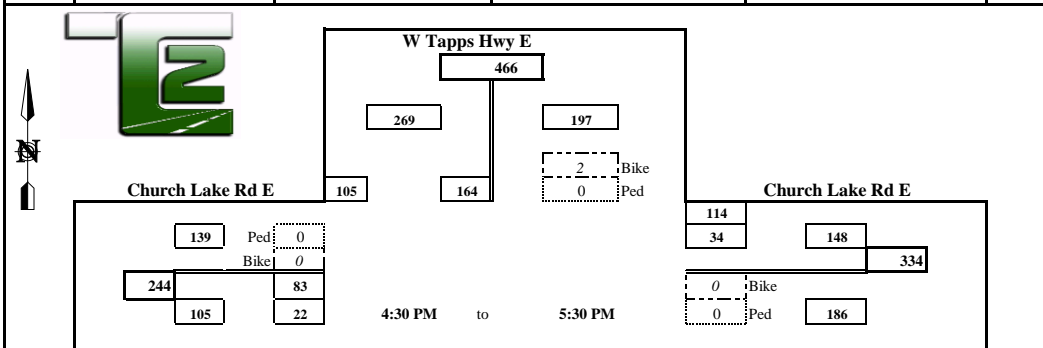
WBE/DBE

Intersection: W Tapps Hwy E & Church Lake Rd E
 Location: Bonney Lake, Washington

Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval Ending at	From North on (SB) W Tapps Hwy E				From South on (NB) Church Lake Rd E				From East on (WB) Church Lake Rd E				From West on (EB) Church Lake Rd E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	25	0	12	0	0	0	0	1	0	8	20	1	22	8	0	95
4:30 P	1	41	0	16	0	0	0	0	1	0	7	25	0	15	8	0	112
4:45 P	2	30	0	28	0	0	0	0	0	0	11	32	0	19	6	0	126
5:00 P	1	36	0	15	0	0	0	0	1	0	7	25	0	27	4	0	114
5:15 P	1	54	0	34	0	0	0	0	0	0	9	34	0	20	7	0	158
5:30 P	0	44	0	28	0	0	0	0	0	0	7	23	2	17	5	0	124
5:45 P	1	40	0	15	0	0	0	0	0	0	12	15	0	21	11	0	114
6:00 P	0	36	0	18	0	0	0	0	0	0	10	32	0	17	2	0	115
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	6	306	0	166	0	0	0	0	3	0	71	206	3	158	51	0	958
Peak Hour: 4:30 PM to 5:30 PM																	
Total	4	164	0	105	0	0	0	0	1	0	34	114	2	83	22	0	522
Approach	269				0				148				105				522
%HV	1.5%				n/a				0.7%				1.9%				1.3%
PHF	0.76				n/a				0.86				0.85				0.83



PEDS Across:

	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

NO PEDS

Bicycles From:

	N	S	E	W	
INT 01			2		2
INT 02	1				1
INT 03					0
INT 04	1				1
INT 05					0
INT 06	1				1
INT 07					0
INT 08	1				1
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	4	0	2	0	6

632 1.0 PHF Peak Hour Volume

	PHF	%HV
EB	0.85	1.9%
WB	0.86	0.7%
NB	0.83	n/a
SB	0.76	1.5%
T Int.	0.83	1.3%

Check In: 522 Out: 522

Conditions:

Special Notes



Prepared for: **Shea, Carr, Jewell**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

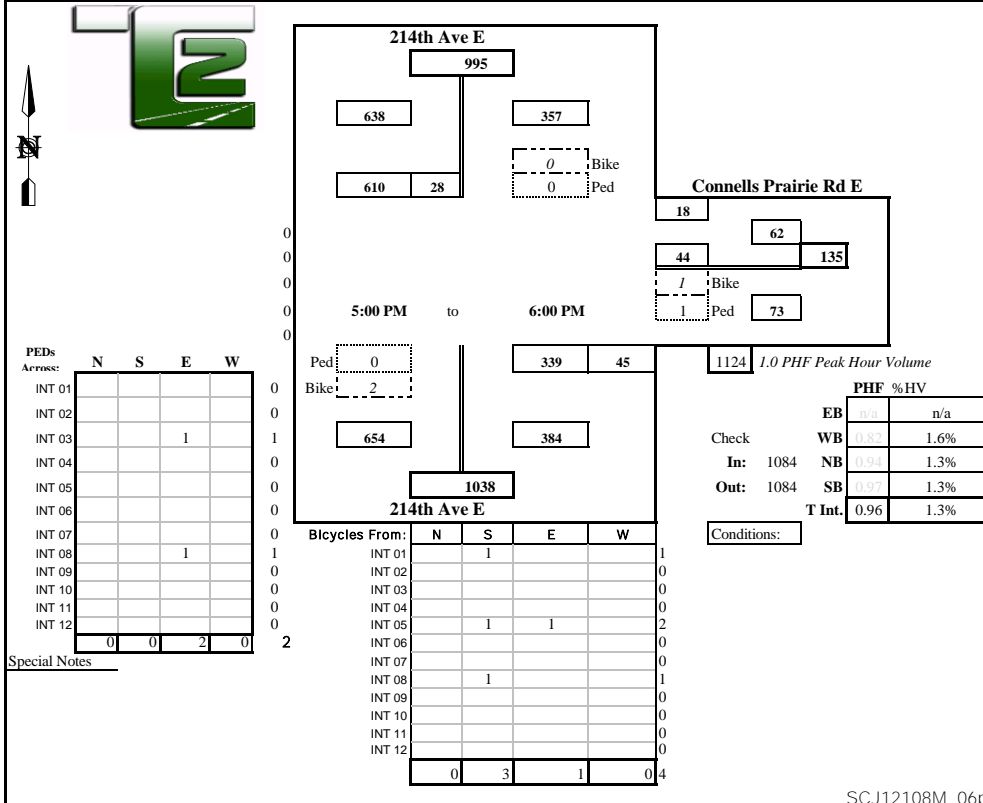
Intersection: 214th Ave E & Connells Prairie Rd E
 Location: Bonney Lake, Washington

Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval Ending at	From North on (SB) 214th Ave E				From South on (NB) 214th Ave E				From East on (WB) Connells Prairie Rd E				From West on (EB) 0				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	4	3	157	0	1	0	55	11	2	9	0	4	0	0	0	0	239
4:30 P	3	6	136	0	2	0	80	14	0	7	0	2	0	0	0	0	245
4:45 P	5	10	146	0	1	0	73	14	0	6	0	2	0	0	0	0	251
5:00 P	0	6	160	0	1	0	72	17	1	7	0	5	0	0	0	0	267
5:15 P	2	7	158	0	2	0	89	13	1	11	0	3	0	0	0	0	281
5:30 P	2	10	147	0	1	0	78	14	0	13	0	2	0	0	0	0	264
5:45 P	2	6	157	0	1	0	83	8	0	8	0	6	0	0	0	0	268
6:00 P	2	5	148	0	1	0	89	10	0	12	0	7	0	0	0	0	271
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	20	53	1209	0	10	0	619	101	4	73	0	31	0	0	0	0	2086
Peak Hour: 5:00 PM to 6:00 PM																	

Total	8	28	610	0	5	0	339	45	1	44	0	18	0	0	0	0	1084
Approach	638				384				62				0				1084
%HV	1.3%				1.3%				1.6%				n/a				1.3%
PHF	0.97				0.94				0.82				n/a				0.96





Prepared for: **Shea, Carr, Jewell**
Traffic Count Consultants, Inc.

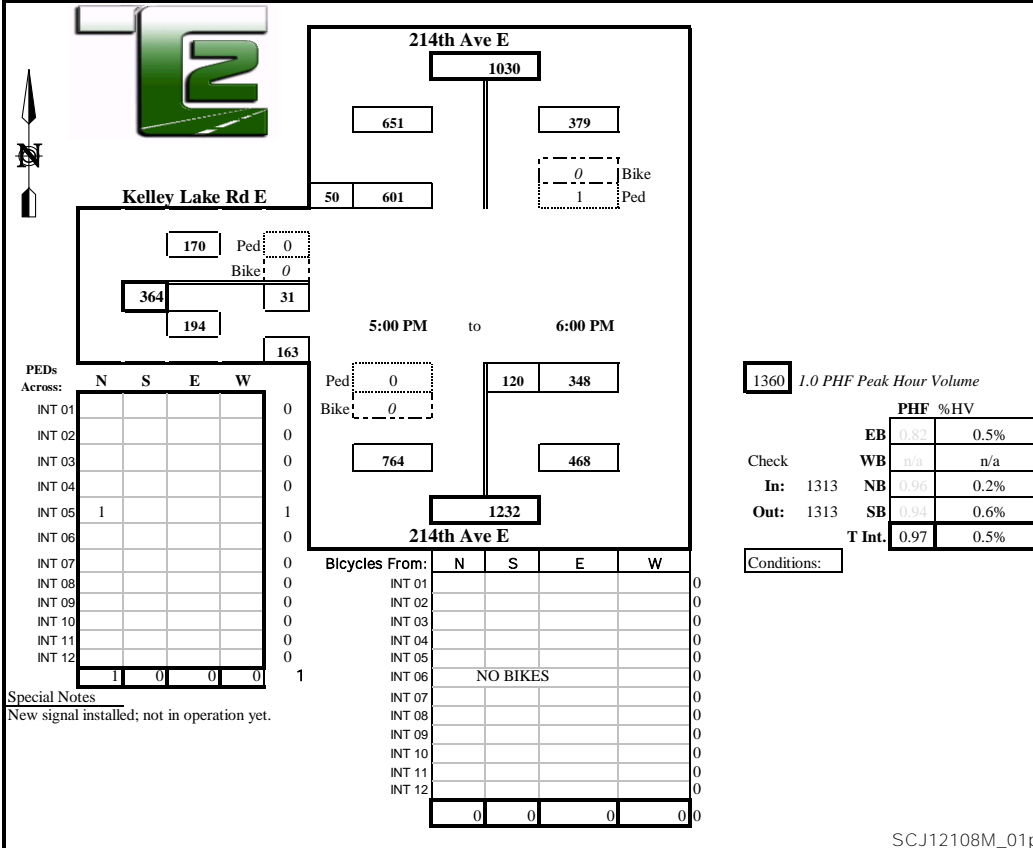
Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: 214th Ave E & Kelley Lake Rd E
 Location: Bonney Lake, Washington

Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval Ending at	From North on (SB) 214th Ave E				From South on (NB) 214th Ave E				From East on (WB) 0				From West on (EB) Kelley Lake Rd E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	4	0	124	6	1	25	77	0	0	0	0	0	4	3	0	47	282
4:30 P	0	0	154	12	0	24	93	0	0	0	0	0	1	1	0	21	305
4:45 P	3	0	158	12	2	28	78	0	0	0	0	0	0	2	0	35	313
5:00 P	1	0	165	3	0	24	86	0	0	0	0	0	0	7	0	27	312
5:15 P	1	0	137	13	0	28	88	0	0	0	0	0	0	5	0	41	312
5:30 P	1	0	164	10	0	39	81	0	0	0	0	0	1	3	0	43	340
5:45 P	0	0	143	16	0	28	82	0	0	0	0	0	0	16	0	43	328
6:00 P	2	0	157	11	1	25	97	0	0	0	0	0	0	7	0	36	333
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	12	0	1202	83	4	221	682	0	0	0	0	0	6	44	0	293	2525
Peak Hour: 5:00 PM to 6:00 PM																	
Total	4	0	601	50	1	120	348	0	0	0	0	0	1	31	0	163	1313
Approach	651				468				0				194				1313
%HV	0.6%				0.2%				n/a				0.5%				0.5%
PHF	0.94				0.96				n/a				0.82				0.97



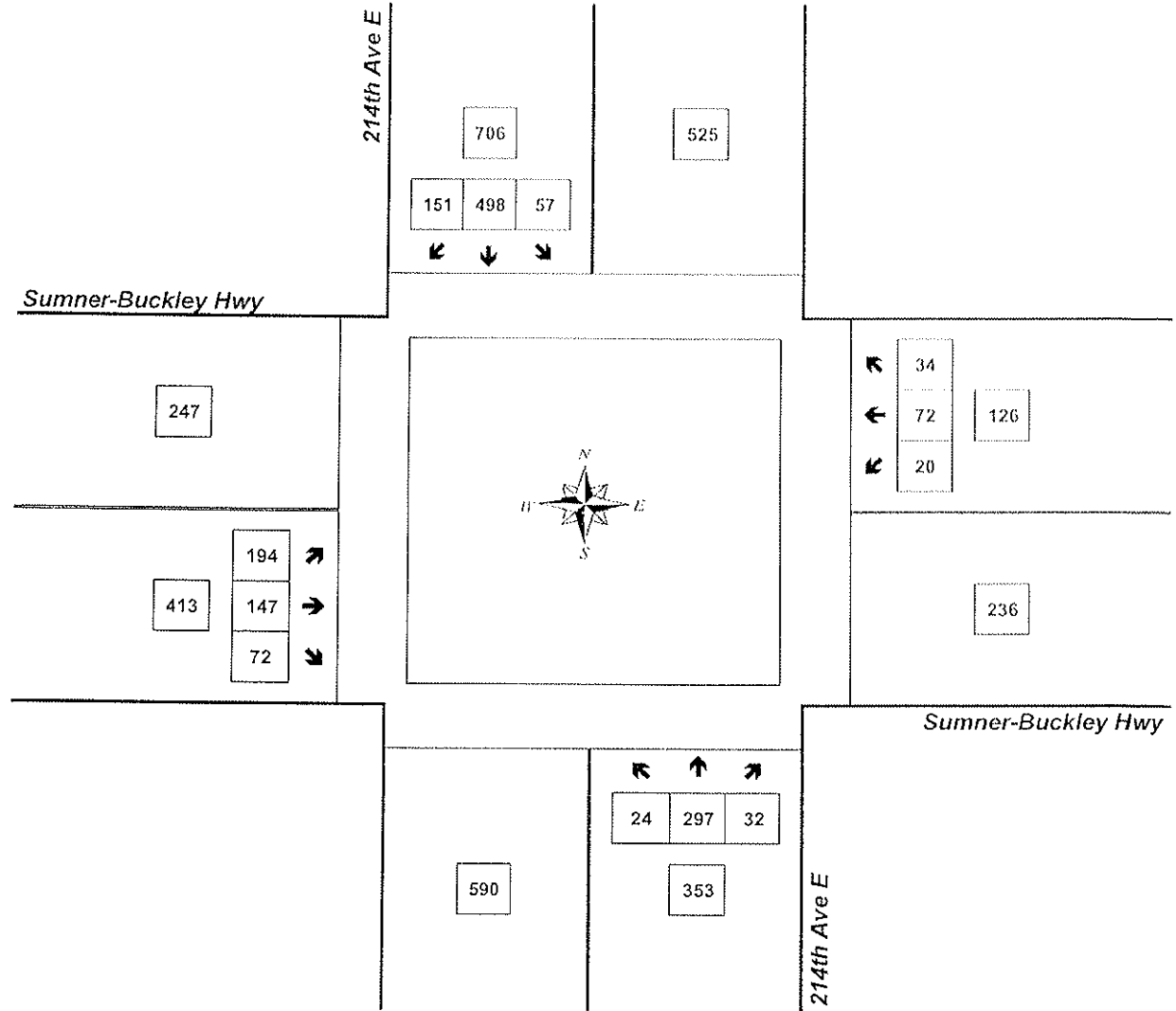
Peak Hour Summary



Mark Skaggs
(206) 251-0300

214th Ave E & Sumner-Buckley Hwy

4:30 PM to 5:30 PM
Tuesday, May 03, 2011



Approach	PHF	HV%	Volume
EB	0.91	0.7%	413
WB	0.88	2.4%	126
NB	0.93	0.8%	353
SB	0.91	0.8%	706
Intersection	0.92	0.9%	1,598

Count Period: 4:00 PM to 6:00 PM



Prepared for: **Shea, Carr, Jewell**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

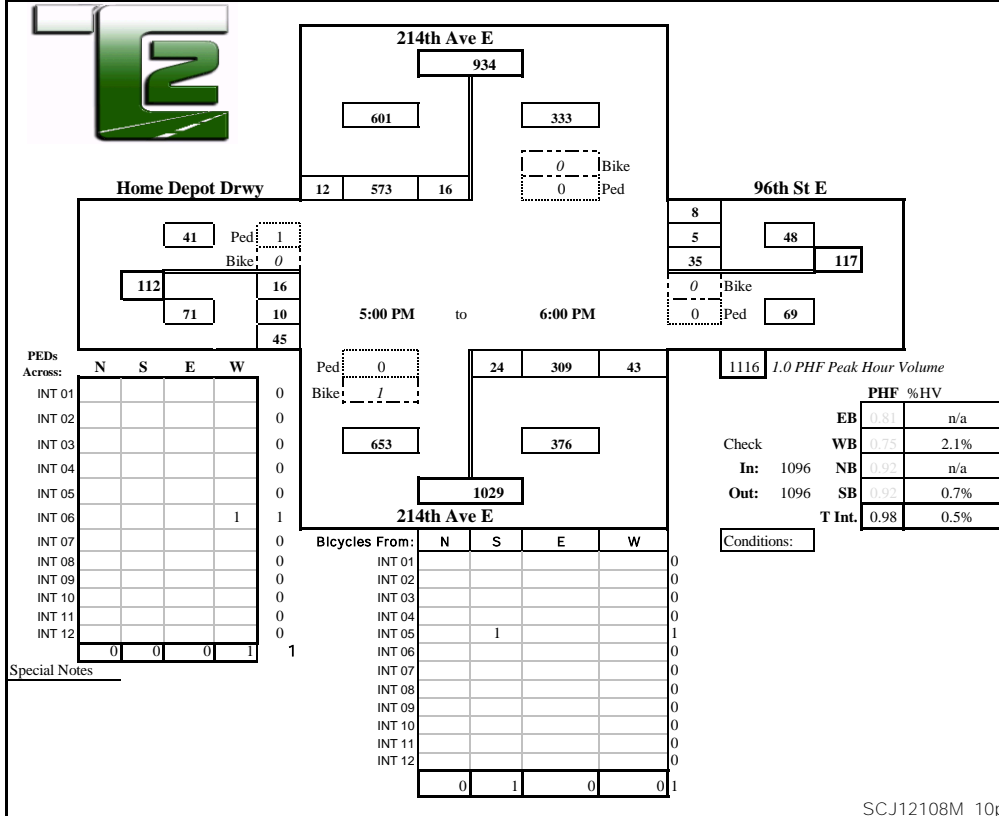
WBE/DBE

Intersection: 214th Ave E & 96th St E
 Location: Bonney Lake, Washington

Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval	From North on (SB) 214th Ave E				From South on (NB) 214th Ave E				From East on (WB) 96th St E				From West on (EB) Home Depot Drwy				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	1	131	2	3	7	58	10	0	5	3	1	0	4	1	13	236
4:30 P	0	5	136	3	3	5	71	7	1	11	2	2	0	5	1	13	261
4:45 P	2	3	116	4	0	7	70	13	0	4	1	6	0	6	2	20	252
5:00 P	2	1	126	3	1	8	70	10	0	11	1	1	0	3	0	10	244
5:15 P	1	2	136	2	0	6	81	11	1	6	3	5	0	3	4	15	274
5:30 P	1	4	140	5	0	5	74	13	0	5	2	1	0	3	2	12	266
5:45 P	1	6	155	3	0	6	70	8	0	9	0	1	0	7	2	12	279
6:00 P	1	4	142	2	0	7	84	11	0	15	0	1	0	3	2	6	277
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	10	26	1082	24	7	51	578	83	2	66	12	18	0	34	14	101	2089
Peak Hour: 5:00 PM to 6:00 PM																	
Total	4	16	573	12	0	24	309	43	1	35	5	8	0	16	10	45	1096
Approach	601				376				48				71				1096
%HV	0.7%				n/a				2.1%				n/a				0.5%
PHF	0.92				0.92				0.75				0.81				0.98



Your Company Name Here

This is your address
Your City, State, Zip Code
Your Tagline Here

Counter: D4-2816
Counted By: Vicki Herrera
Weather: Overcast
SR 410 at 181st, MP. 13.37

File Name : SR 410 AT 181ST 41712 PM
Site Code : 41041712
Start Date : 4/17/2012
Page No : 3

Start Time	Old Buckley Hwy/AM/PM From North					SR 410/Buckley From East					181st/Residential From South					SR 410/Sumner From West					Int. Total
	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	21	1	76	16	114	0	382	6	0	388	2	1	0	0	3	136	548	2	0	686	1191
04:30 PM	9	2	79	37	127	1	467	5	1	474	1	0	0	0	1	136	556	1	0	693	1295
04:45 PM	28	0	100	6	134	1	429	12	1	443	1	0	0	1	2	141	500	1	0	642	1221
05:00 PM	13	0	89	6	108	0	419	5	2	426	0	1	0	0	1	152	507	3	0	662	1197
Total Volume	71	3	344	65	483	2	1697	28	4	1731	4	2	0	1	7	565	2111	7	0	2683	4904
% App. Total	14.7	0.6	71.2	13.5		0.1	98	1.6	0.2		57.1	28.6	0	14.3		21.1	78.7	0.3	0		
PHF	.634	.375	.860	.439	.901	.500	.908	.583	.500	.913	.500	.500	.000	.250	.583	.929	.949	.583	.000	.968	.947

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

	04:15 PM					04:00 PM					03:30 PM					05:00 PM				
+0 mins.	21	1	76	16	114	1	449	6	1	457	1	0	0	0	1	152	507	3	0	662
+15 mins.	9	2	79	37	127	0	382	6	0	388	1	0	1	2	4	135	528	0	0	663
+30 mins.	28	0	100	6	134	1	467	5	1	474	0	2	0	1	3	173	508	2	1	684
+45 mins.	13	0	89	6	108	1	429	12	1	443	2	1	0	0	3	147	540	2	0	689
Total Volume	71	3	344	65	483	3	1727	29	3	1762	4	3	1	3	11	607	2083	7	1	2698
% App. Total	14.7	0.6	71.2	13.5		0.2	98	1.6	0.2		36.4	27.3	9.1	27.3		22.5	77.2	0.3	0	
PHF	.634	.375	.860	.439	.901	.750	.925	.604	.750	.929	.500	.375	.250	.375	.688	.877	.964	.583	.250	.979



Prepared for: **Shea, Carr, Jewell**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Main St E & Sumner-Buckley Hwy E
 Location: Bonney Lake, Washington

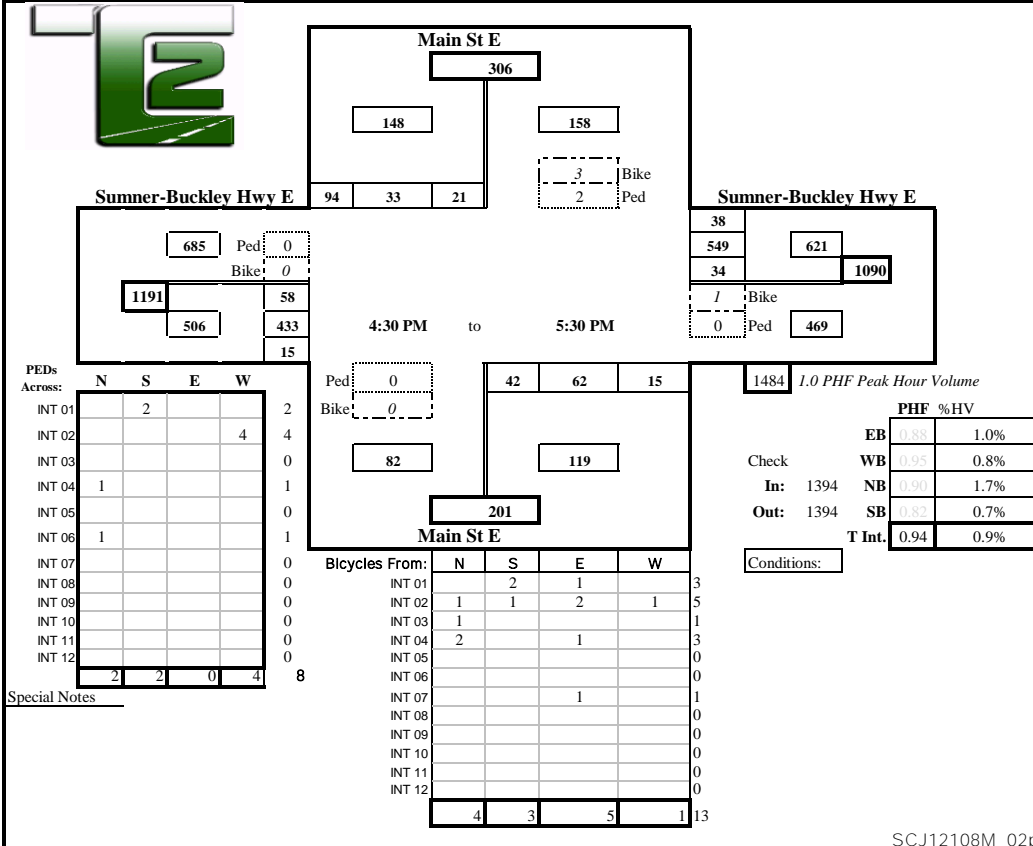
Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval Ending at	From North on (SB) Main St E				From South on (NB) Main St E				From East on (WB) Sumner-Buckley Hwy E				From West on (EB) Sumner-Buckley Hwy E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	4	9	20	0	9	10	4	3	8	156	4	3	9	92	3	328
4:30 P	1	6	2	20	1	8	7	2	1	6	116	8	2	8	70	2	255
4:45 P	0	4	4	24	1	12	16	5	3	12	139	12	2	12	126	5	371
5:00 P	1	6	11	28	0	9	17	4	0	6	142	5	0	16	96	3	343
5:15 P	0	5	11	18	0	14	11	3	1	11	137	14	3	11	103	5	343
5:30 P	0	6	7	24	1	7	18	3	1	5	131	7	0	19	108	2	337
5:45 P	0	6	9	19	0	8	4	3	2	8	142	8	1	9	79	3	298
6:00 P	0	3	4	25	0	8	20	3	2	5	163	3	0	11	59	5	309
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	4	40	57	178	3	75	103	27	13	61	1126	61	11	95	733	28	2584
--------------	---	----	----	-----	---	----	-----	----	----	----	------	----	----	----	-----	----	------

Peak Hour: 4:30 PM to 5:30 PM

Total	1	21	33	94	2	42	62	15	5	34	549	38	5	58	433	15	1394
Approach	148				119				621				506				1394
%HV	0.7%				1.7%				0.8%				1.0%				0.9%
PHF	0.82				0.90				0.95				0.88				0.94



Peak Hour Summary

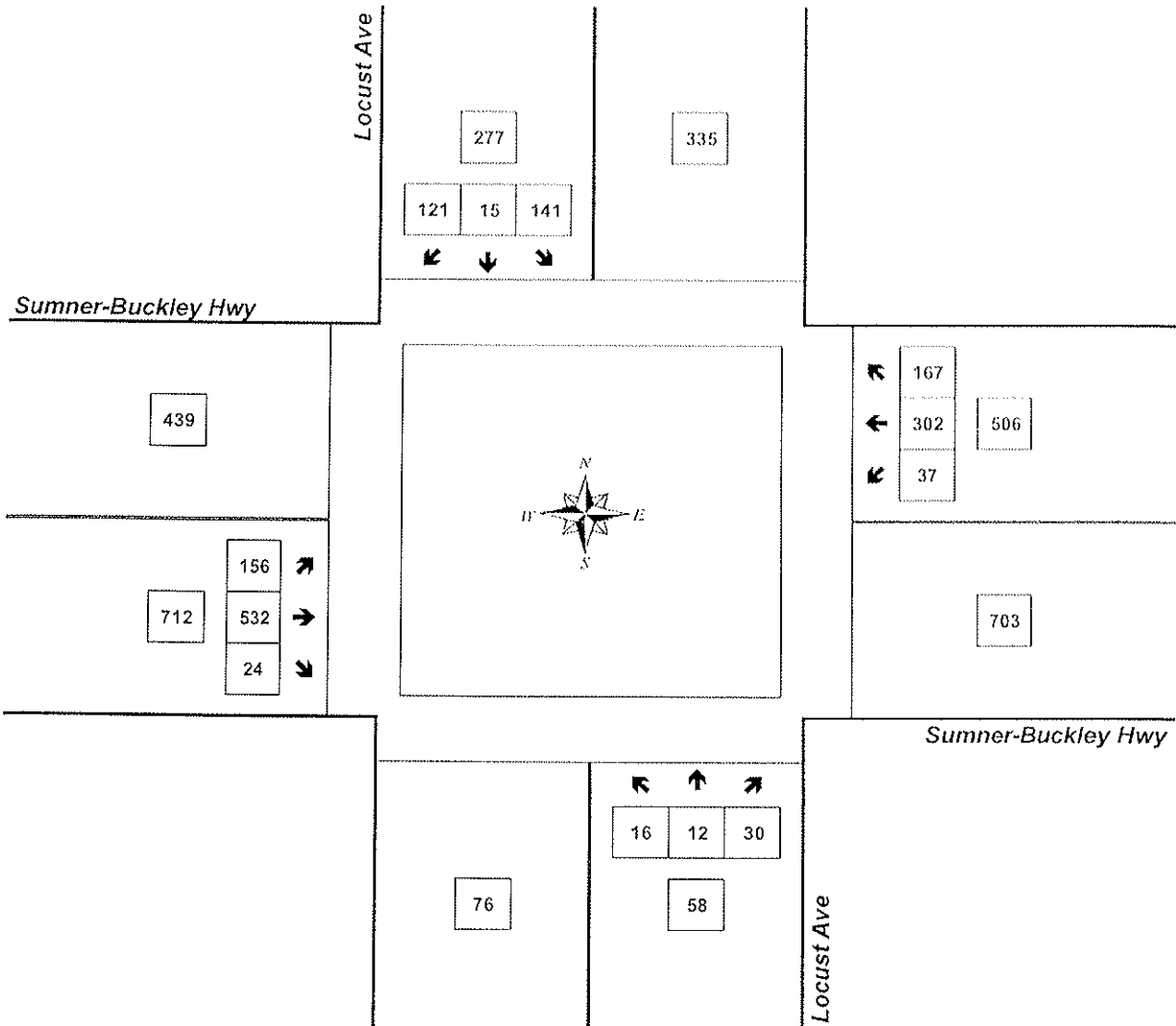


Mark Skaggs
(208) 251-0300

Locust Ave & Sumner-Buckley Hwy

4:30 PM to 5:30 PM

Tuesday, May 03, 2011



Approach	PHF	HV%	Volume
EB	0.97	0.3%	712
WB	0.92	0.0%	506
NB	0.97	0.0%	58
SB	0.83	0.7%	277
Intersection	0.99	0.3%	1,553

Count Period: 4:00 PM to 6:00 PM

Your Company Name Here

This is your address
Your City, State, Zip Code
Your Tagline Here

Counter: D4-2816
Counted By: Vicki Herrera
Weather: Sun
SR 410 at 184th, MP. 13.60

File Name : SR 410 AT 184TH 81710 PM
Site Code : 41081710
Start Date : 8/17/2010
Page No : 3

Start Time	184th/Bank From North					SR 410/Buckley From East					184th/Park n' Ride From South					SR 410/Sumner From West					Int. Total
	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	32	13	1	0	46	44	258	10	3	315	35	18	7	37	97	5	394	22	15	436	894
05:15 PM	26	18	0	0	44	34	323	12	3	372	39	10	8	39	96	6	476	18	11	511	1023
05:30 PM	20	29	1	4	54	21	290	7	1	319	32	21	2	24	79	6	410	30	11	457	909
05:45 PM	30	8	0	2	40	39	345	10	4	398	33	16	9	32	90	12	430	25	13	480	1008
Total Volume	108	68	2	6	184	138	1216	39	11	1404	139	65	26	132	362	29	1710	95	50	1884	3834
% App. Total	58.7	37	1.1	3.3		9.8	86.6	2.8	0.8		38.4	18	7.2	36.5		1.5	90.8	5	2.7		
PHF	.844	.586	.500	.375	.852	.784	.881	.813	.688	.882	.891	.774	.722	.846	.933	.604	.898	.792	.833	.922	.937

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

	05:00 PM					05:00 PM					04:00 PM									
+0 mins.	32	13	1	0	46	44	258	10	3	315	35	18	7	37	97	1	464	30	5	500
+15 mins.	26	18	0	0	44	34	323	12	3	372	39	10	8	39	96	3	437	33	8	481
+30 mins.	20	29	1	4	54	21	290	7	1	319	32	21	2	24	79	8	468	19	9	504
+45 mins.	30	8	0	2	40	39	345	10	4	398	33	16	9	32	90	8	461	25	9	503
Total Volume	108	68	2	6	184	138	1216	39	11	1404	139	65	26	132	362	20	1830	107	31	1988
% App. Total	58.7	37	1.1	3.3		9.8	86.6	2.8	0.8		38.4	18	7.2	36.5		1	92.1	5.4	1.6	
PHF	.844	.586	.500	.375	.852	.784	.881	.813	.688	.882	.891	.774	.722	.846	.933	.625	.978	.811	.861	.986

Your Company Name Here

This is your address
Your City, State, Zip Code
Your Tagline Here

Counter: D4-2816
Counted By: Vicki Herrera
Weather: Cloudy
SR 410 at 192nd, MP. 14.22

File Name : SR 410 AT 192ND 10312 PM
Site Code : 41010312
Start Date : 1/3/2012
Page No : 1

Groups Printed- Cars - Trucks

Start Time	192nd/Target From North					SR 410/Buckley From East					192nd/Wal-Mart From South					SR 410/Sumner From West					Int. Total
	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	
02:00 PM	35	29	6	17	87	5	257	25	13	300	49	25	3	6	83	17	255	30	7	309	779
02:15 PM	49	42	5	12	108	16	209	20	8	253	35	42	1	0	78	22	313	21	5	361	800
02:30 PM	53	29	5	19	106	21	332	32	21	406	52	30	3	5	90	28	367	44	8	447	1049
02:45 PM	50	29	10	13	102	10	293	32	23	358	29	17	4	3	53	21	414	45	5	485	998
Total	187	129	26	61	403	52	1091	109	65	1317	165	114	11	14	304	88	1349	140	25	1602	3626
03:00 PM	53	32	11	17	113	20	277	29	23	349	42	34	5	1	82	41	411	32	11	495	1039
03:15 PM	36	26	2	14	78	13	313	32	17	375	32	33	2	3	70	29	457	30	11	527	1050
03:30 PM	52	26	7	21	106	13	273	32	16	334	51	29	5	1	86	25	429	28	13	495	1021
03:45 PM	54	37	1	12	104	7	318	27	40	392	34	33	6	1	74	33	514	41	9	597	1167
Total	195	121	21	64	401	53	1181	120	96	1450	159	129	18	6	312	128	1811	131	44	2114	4277
04:00 PM	52	32	4	17	105	21	313	27	17	378	49	33	6	2	90	29	457	32	11	529	1102
04:15 PM	54	27	6	16	103	16	357	27	27	427	52	27	7	3	89	30	477	30	7	544	1163
04:30 PM	60	29	14	22	125	17	343	32	19	411	22	32	5	2	61	17	524	30	18	589	1186
04:45 PM	77	32	15	9	133	12	274	36	18	340	29	65	3	2	99	27	453	28	6	514	1086
Total	243	120	39	64	466	66	1287	122	81	1556	152	157	21	9	339	103	1911	120	42	2176	4537
05:00 PM	44	29	6	14	93	6	282	30	28	346	36	51	1	1	89	24	484	11	5	524	1052
05:15 PM	56	30	11	10	107	9	263	26	15	313	40	35	2	3	80	20	395	16	4	435	935
05:30 PM	46	24	5	8	83	8	264	42	9	323	28	32	3	0	63	27	506	29	8	570	1039
05:45 PM	53	31	7	15	106	5	288	29	17	339	30	40	6	3	79	31	546	31	6	614	1138
Total	199	114	29	47	389	28	1097	127	69	1321	134	158	12	7	311	102	1931	87	23	2143	4164
Grand Total	824	484	115	236	1659	199	4656	478	311	5644	610	558	62	36	1266	421	7002	478	134	8035	16604
Aprch %	49.7	29.2	6.9	14.2		3.5	82.5	8.5	5.5		48.2	44.1	4.9	2.8		5.2	87.1	5.9	1.7		
Total %	5	2.9	0.7	1.4	10	1.2	28	2.9	1.9	34	3.7	3.4	0.4	0.2	7.6	2.5	42.2	2.9	0.8	48.4	
Cars	823	484	114	236	1657	196	4549	477	306	5528	608	557	62	36	1263	421	6945	478	134	7978	16426
% Cars	99.9	100	99.1	100	99.9	98.5	97.7	99.8	98.4	97.9	99.7	99.8	100	100	99.8	100	99.2	100	100	99.3	98.9
Trucks	1	0	1	0	2	3	107	1	5	116	2	1	0	0	3	0	57	0	0	57	178
% Trucks	0.1	0	0.9	0	0.1	1.5	2.3	0.2	1.6	2.1	0.3	0.2	0	0	0.2	0	0.8	0	0	0.7	1.1

Your Company Name Here

This is your address
Your City, State, Zip Code
Your Tagline Here

Counter: D4-2816
Counted By: Vicki Herrera
Weather: Sun
SR 410 at 195th, MP. 14.42

File Name : SR 410 AT 195TH 82410 PM
Site Code : 41082410
Start Date : 8/24/2010
Page No : 3

Start Time	195th/U-Haul From North					SR 410/Buckley From East					195th/Jack in the Box From South					SR 410/Sumner From West					Int. Total
	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	5	0	1	1	7	47	363	2	0	412	25	1	7	39	72	3	537	13	1	554	1045
05:15 PM	2	0	0	3	5	61	376	1	0	438	12	0	8	57	77	1	465	22	1	489	1009
05:30 PM	5	2	0	2	9	54	313	2	0	369	8	0	4	64	76	4	487	13	3	507	961
05:45 PM	3	0	0	1	4	56	366	2	0	424	16	0	5	42	63	0	497	18	1	516	1007
Total Volume	15	2	1	7	25	218	1418	7	0	1643	61	1	24	202	288	8	1986	66	6	2066	4022
% App. Total	60	8	4	28		13.3	86.3	0.4	0		21.2	0.3	8.3	70.1		0.4	96.1	3.2	0.3		
PHF	.750	.250	.250	.583	.694	.893	.943	.875	.000	.938	.610	.250	.750	.789	.935	.500	.925	.750	.500	.932	.962

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

	05:00 PM					05:00 PM					04:45 PM					05:00 PM				
+0 mins.	5	0	1	1	7	47	363	2	0	412	15	1	14	46	76	3	537	13	1	554
+15 mins.	2	0	0	3	5	61	376	1	0	438	25	1	7	39	72	1	465	22	1	489
+30 mins.	5	2	0	2	9	54	313	2	0	369	12	0	8	57	77	4	487	13	3	507
+45 mins.	3	0	0	1	4	56	366	2	0	424	8	0	4	64	76	0	497	18	1	516
Total Volume	15	2	1	7	25	218	1418	7	0	1643	60	2	33	206	301	8	1986	66	6	2066
% App. Total	60	8	4	28		13.3	86.3	0.4	0		19.9	0.7	11	68.4		0.4	96.1	3.2	0.3	
PHF	.750	.250	.250	.583	.694	.893	.943	.875	.000	.938	.600	.500	.589	.805	.977	.500	.925	.750	.500	.932

Your Company Name Here

This is your address
Your City, State, Zip Code
Your Tagline Here

Counter: D4-3264/D4-2816
Counted By: BZ & VH
Weather: Clear
SR 410 at South Prairie, MP. 14.65

File Name : SR 410 AT SPRAIRIE 13112 PM MERGE
Site Code : 00000001
Start Date : 1/31/2012
Page No : 3

Start Time	198th/Residential From North					SR 410/Buckley From East					South Prairie/Albertson's From South					SR 410/Sumner From West					Int. Total
	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. 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	36	29	8	3	76	26	240	6	4	276	149	20	0	15	184	11	368	197	52	628	1164
04:45 PM	17	29	4	2	52	37	236	13	2	288	135	14	0	19	168	12	379	198	41	630	1138
05:00 PM	51	29	1	3	84	24	237	7	2	270	173	26	1	12	212	6	364	174	52	596	1162
05:15 PM	16	19	4	2	41	21	231	7	2	261	126	14	0	14	154	5	365	228	31	629	1085
Total Volume	120	106	17	10	253	108	944	33	10	1095	583	74	1	60	718	34	1476	797	176	2483	4549
% App. Total	47.4	41.9	6.7	4		9.9	86.2	3	0.9		81.2	10.3	0.1	8.4		1.4	59.4	32.1	7.1		
PHF	.588	.914	.531	.833	.753	.730	.983	.635	.625	.951	.842	.712	.250	.789	.847	.708	.974	.874	.846	.985	.977

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

	04:15 PM					04:30 PM					02:15 PM					04:30 PM				
+0 mins.	24	32	7	1	64	26	240	6	4	276	162	21	1	9	193	11	368	197	52	628
+15 mins.	36	29	8	3	76	37	236	13	2	288	208	42	1	16	267	12	379	198	41	630
+30 mins.	17	29	4	2	52	24	237	7	2	270	143	21	0	9	173	6	364	174	52	596
+45 mins.	51	29	1	3	84	21	231	7	2	261	120	22	0	14	156	5	365	228	31	629
Total Volume	128	119	20	9	276	108	944	33	10	1095	633	106	2	48	789	34	1476	797	176	2483
% App. Total	46.4	43.1	7.2	3.3		9.9	86.2	3	0.9		80.2	13.4	0.3	6.1		1.4	59.4	32.1	7.1	
PHF	.627	.930	.625	.750	.821	.730	.983	.635	.625	.951	.761	.631	.500	.750	.739	.708	.974	.874	.846	.985

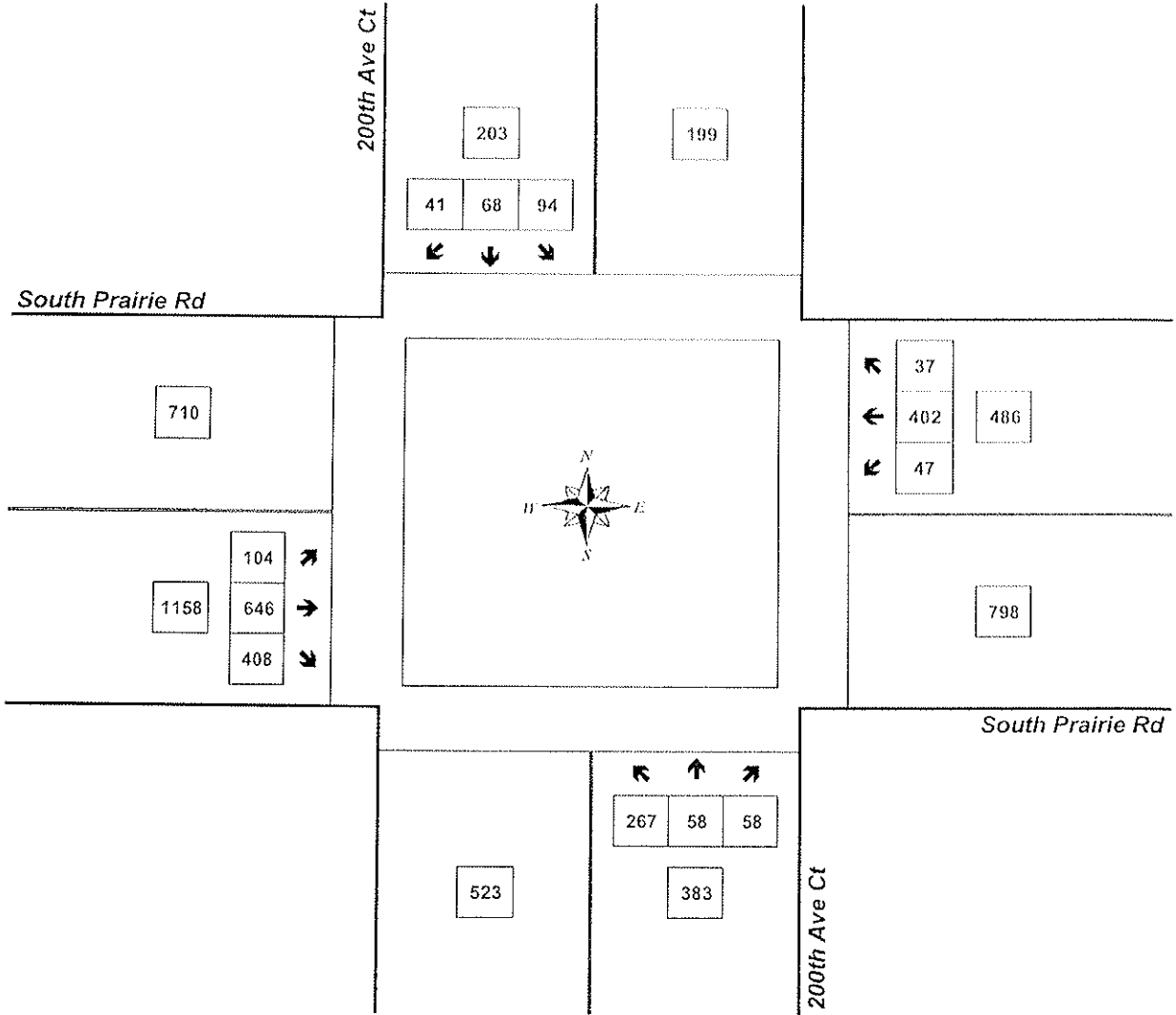
Peak Hour Summary



Mark Skaggs
(206) 291-0300

200th Ave Ct & South Prairie Rd

4:15 PM to 5:15 PM
Tuesday, May 03, 2011



Approach	PHF	HV%	Volume
EB	0.94	1.0%	1,158
WB	0.91	1.0%	486
NB	0.93	0.5%	383
SB	0.81	0.5%	203
Intersection	0.96	0.9%	2,230

Count Period: 4:00 PM to 6:00 PM

Your Company Name Here

This is your address
Your City, State, Zip Code
Your Tagline Here

Counter: D4-2816
Counted By: Vicki Herrera
Weather: Sun
SR 410 at 208th, MP. 15.19

File Name : SR 410 AT 208TH 121311 PM
Site Code : 41012131
Start Date : 12/13/2011
Page No : 3

Start Time	208th/Midas From North					SR 410/Buckley From East					208th/Arco & 76 From South					SR 410/Sumner From West					Int. Total
	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	8	5	4	3	20	26	288	8	2	324	38	7	8	10	63	28	349	54	5	436	843
04:30 PM	19	11	4	2	36	15	188	6	4	213	60	4	6	25	95	34	324	49	4	411	755
04:45 PM	20	13	10	1	44	30	253	7	1	291	55	7	14	15	91	33	329	53	9	424	850
05:00 PM	14	9	3	3	29	16	262	7	4	289	50	7	12	22	91	22	326	46	4	398	807
Total Volume	61	38	21	9	129	87	991	28	11	1117	203	25	40	72	340	117	1328	202	22	1669	3255
% App. Total	47.3	29.5	16.3	7		7.8	88.7	2.5	1		59.7	7.4	11.8	21.2		7	79.6	12.1	1.3		
PHF	.763	.731	.525	.750	.733	.725	.860	.875	.688	.862	.846	.893	.714	.720	.895	.860	.951	.935	.611	.957	.957

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

	04:00 PM					04:45 PM					04:30 PM					04:15 PM					
+0 mins.	41	5	6	3	55	30	253	7	1	291	60	4	6	25	95	28	349	54	5	436	
+15 mins.	8	5	4	3	20	16	262	7	4	289	55	7	14	15	91	34	324	49	4	411	
+30 mins.	19	11	4	2	36	20	252	5	3	280	50	7	12	22	91	33	329	53	9	424	
+45 mins.	20	13	10	1	44	23	236	9	2	270	43	8	7	11	69	22	326	46	4	398	
Total Volume	88	34	24	9	155	89	1003	28	10	1130	208	26	39	73	346	117	1328	202	22	1669	
% App. Total	56.8	21.9	15.5	5.8		7.9	88.8	2.5	0.9		60.1	7.5	11.3	21.1		7	79.6	12.1	1.3		
PHF	.537	.654	.600	.750	.705	.742	.957	.778	.625	.971	.867	.813	.696	.730	.911	.860	.951	.935	.611	.957	.957

Your Company Name Here

This is your address
Your City, State, Zip Code
Your Tagline Here

Counter : D4-3264
Counted By : ZUBB
Weather : LT RAIN
SR 410 AT 211TH AVE E MP 15.41

File Name : SR 410 AT 211TH 10411 PM
Site Code : 00000000
Start Date : 1/4/2011
Page No : 1

Groups Printed- Cars - Trucks - Peds

Start Time	211TH AVE EAST From North					SR 410 FROM BUCKLEY From East					211TH AVE EAST (McDONALDS) From South					SR 410 FROM BONNEY LAKE From West					Int. Total
	Left	Thru	Right	RT ON RED	App. Total	Left	Thru	Right	RT ON RED	App. Total	Left	Thru	Right	RT ON RED	App. Total	Left	Thru	Right	RT ON RED	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		
02:00 PM	4	2	1	3	10	42	155	3	3	203	48	1	9	22	80	9	223	15	1	248	
02:15 PM	8	2	4	3	17	28	173	6	0	207	35	2	11	12	60	6	238	22	2	268	
02:30 PM	7	1	3	6	17	28	174	7	3	212	28	6	10	23	67	5	216	27	1	249	
02:45 PM	7	1	5	6	19	49	150	13	0	212	42	0	9	21	72	17	235	33	3	288	
Total	26	6	13	18	63	147	652	29	6	834	153	9	39	78	279	37	912	97	7	1053	
03:00 PM	4	0	3	6	13	28	200	2	0	230	36	3	17	14	70	9	308	32	0	349	
03:15 PM	3	1	5	10	19	28	187	10	3	228	53	1	16	10	80	11	249	34	4	298	
03:30 PM	7	0	0	8	15	34	204	4	0	242	33	2	14	19	68	8	269	26	1	304	
03:45 PM	12	6	3	5	26	40	215	8	1	264	38	3	6	12	59	10	236	25	6	277	
Total	26	7	11	29	73	130	806	24	4	964	160	9	53	55	277	38	1062	117	11	1228	
04:00 PM	4	0	1	7	12	42	182	5	2	231	47	2	15	29	93	9	251	24	1	285	
04:15 PM	9	3	2	1	15	35	189	9	0	233	33	1	24	15	73	4	281	25	2	312	
04:30 PM	11	2	5	1	19	49	226	7	3	285	46	2	28	11	87	12	262	27	7	308	
04:45 PM	15	2	1	2	20	32	189	7	3	231	33	2	12	20	67	13	309	24	4	350	
Total	39	7	9	11	66	158	786	28	8	980	159	7	79	75	320	38	1103	100	14	1255	
05:00 PM	5	2	3	6	16	26	180	5	3	214	51	1	11	18	81	13	233	27	3	276	
05:15 PM	5	1	5	1	12	34	169	7	1	211	32	1	12	22	67	11	278	34	1	324	
05:30 PM	8	1	4	1	14	30	230	11	2	273	38	1	10	28	77	7	273	24	0	304	
05:45 PM	6	1	2	3	12	35	153	7	1	196	36	3	9	19	67	10	251	24	3	288	
Total	24	5	14	11	54	125	732	30	7	894	157	6	42	87	292	41	1035	109	7	1192	
Grand Total	115	25	47	69	256	560	2976	111	25	3672	629	31	213	295	1168	154	4112	423	39	4728	
Approch %	44.9	9.8	18.4	27		15.3	81	3	0.7		53.9	2.7	18.2	25.3		3.3	87	8.9	0.8		
Total %	1.2	0.3	0.5	0.7	2.6	5.7	30.3	1.1	0.3	37.4	6.4	0.3	2.2	3	11.9	1.6	41.9	4.3	0.4	48.1	
% Cars	114	25	47	69	255	560	2902	111	25	3598	628	31	213	294	1166	154	4042	421	39	4656	
% Cars	99.1	100	100	100	99.6	100	97.5	100	100	98	99.8	100	100	99.7	99.8	100	98.3	99.5	100	98.5	
% Trucks	1	0	0	0	1	0	74	0	0	74	1	0	0	1	2	0	70	2	0	72	
% Trucks	0.9	0	0	0	0.4	0	2.5	0	0	2	0.2	0	0	0.3	0.2	0	1.7	0.5	0	1.5	
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Olympic Region Signal Operations

Turning Movement Count

Counter: D4-2816
 Counted By: Vicki Herrera
 Weather: Rain
 SR 410 at 214th, MP. 15.60

File Name : SR 410 AT 214TH 11811 PM
 Site Code : 41011811
 Start Date : 1/18/2011
 Page No : 3

Start Time	214th/Rite Aid From North					SR 410/to Buckley From East					214th/Safeway From South					SR 410/to Sumner From West					Int. Total
	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. 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	21	90	26	20	157	43	141	9	7	200	54	49	21	5	129	66	152	32	24	274	760
04:45 PM	27	94	27	23	171	45	171	10	3	229	71	35	15	6	127	70	193	52	28	343	870
05:00 PM	43	111	21	12	187	37	142	3	2	184	37	54	20	1	112	77	189	46	18	330	813
05:15 PM	32	88	22	14	156	59	156	0	3	218	50	44	15	2	111	63	186	39	27	315	800
Total Volume	123	383	96	69	671	184	610	22	15	831	212	182	71	14	479	276	720	169	97	1262	3243
% App. Total	18.3	57.1	14.3	10.3		22.1	73.4	2.6	1.8		44.3	38	14.8	2.9		21.9	57.1	13.4	7.7		
PHF	.715	.863	.889	.750	.897	.780	.892	.550	.536	.907	.746	.843	.845	.583	.928	.896	.933	.813	.866	.920	.932

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					04:00 PM					04:30 PM					04:45 PM					
+0 mins.	27	94	27	23	171	52	159	10	5	226	54	49	21	5	129	70	193	52	28	343	
+15 mins.	43	111	21	12	187	32	155	12	7	206	71	35	15	6	127	77	189	46	18	330	
+30 mins.	32	88	22	14	156	43	141	9	7	200	37	54	20	1	112	63	186	39	27	315	
+45 mins.	27	89	23	22	161	45	171	10	3	229	50	44	15	2	111	57	191	48	20	316	
Total Volume	129	382	93	71	675	172	626	41	22	861	212	182	71	14	479	267	759	185	93	1304	
% App. Total	19.1	56.6	13.8	10.5		20	72.7	4.8	2.6		44.3	38	14.8	2.9		20.5	58.2	14.2	7.1		
PHF	.750	.860	.861	.772	.902	.827	.915	.854	.786	.940	.746	.843	.845	.583	.928	.867	.983	.889	.830	.950	

Your Company Name Here

This is your address
Your City, State, Zip Code
Your Tagline Here

Counter: D4-3263
Counted By: BUZZ ZUBB
Weather: CLOUDY
SR 410 AT 234TH MP 16.86

File Name : SR 410 AT 234TH 41712 PM
Site Code : 00000000
Start Date : 4/17/2012
Page No : 3

Start Time	233TH AVE EAST From North					SR 410/BUCKLEY From East					234TH AVE EAST From South					SR 410/BONNEY LAKE From West					Int. Total
	Left	Thru	Right	RT ON RED	App. Total	Left	Thru	Right	RT ON RED	App. Total	Left	Thru	Right	RT ON RED	App. Total	Left	Thru	Right	RT ON RED	App. 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	6	7	6	2	21	12	183	4	0	199	27	5	0	1	33	5	146	24	26	201	454
04:45 PM	6	9	6	1	22	25	144	7	2	178	24	4	0	1	29	8	165	57	9	239	468
05:00 PM	3	5	0	2	10	21	161	6	1	189	23	5	1	2	31	10	155	29	8	202	432
05:15 PM	5	8	1	2	16	27	165	6	1	199	24	7	1	0	32	4	168	34	21	227	474
Total Volume	20	29	13	7	69	85	653	23	4	765	98	21	2	4	125	27	634	144	64	869	1828
% App. Total	29	42	18.8	10.1		11.1	85.4	3	0.5		78.4	16.8	1.6	3.2		3.1	73	16.6	7.4		
PHF	.833	.806	.542	.875	.784	.787	.892	.821	.500	.961	.907	.750	.500	.500	.947	.675	.943	.632	.615	.909	.964

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

	04:00 PM					03:45 PM					03:30 PM					04:45 PM					
+0 mins.	3	5	2	2	12	14	185	9	1	209	35	6	3	0	44	8	165	57	9	239	
+15 mins.	4	15	1	2	22	19	159	4	2	184	32	12	0	0	44	10	155	29	8	202	
+30 mins.	6	7	6	2	21	23	155	1	0	179	22	6	0	1	29	4	168	34	21	227	
+45 mins.	6	9	6	1	22	12	183	4	0	199	29	2	0	0	31	5	169	47	9	230	
Total Volume	19	36	15	7	77	68	682	18	3	771	118	26	3	1	148	27	657	167	47	898	
% App. Total	24.7	46.8	19.5	9.1		8.8	88.5	2.3	0.4		79.7	17.6	2	0.7		3	73.2	18.6	5.2		
PHF	.792	.600	.625	.875	.875	.739	.922	.500	.375	.922	.843	.542	.250	.250	.841	.675	.972	.732	.560	.939	



Prepared for: **Shea, Carr, Jewell**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Sky Island Dr E & Rhodes Lake Rd E
 Location: Bonney Lake, Washington

Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval	From North on (SB) Sky Island Dr E				From South on (NB) 0				From East on (WB) Rhodes Lake Rd E				From West on (EB) Rhodes Lake Rd E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	10	0	21	0	0	0	0	0	0	23	7	1	7	29	0	97
4:30 P	1	9	0	18	0	0	0	0	1	0	24	15	3	9	48	0	123
4:45 P	2	13	0	17	0	0	0	0	0	0	29	10	1	16	50	0	135
5:00 P	0	10	0	15	0	0	0	0	0	0	30	11	0	19	41	0	126
5:15 P	0	7	0	11	0	0	0	0	0	0	38	10	0	11	55	0	132
5:30 P	0	12	0	13	0	0	0	0	0	0	22	7	1	18	41	0	113
5:45 P	0	14	0	9	0	0	0	0	1	0	20	8	0	16	48	0	115
6:00 P	0	14	0	11	0	0	0	0	0	0	22	7	0	17	46	0	117
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	3	89	0	115	0	0	0	0	2	0	208	75	6	113	358	0	958
Peak Hour: 4:15 PM to 5:15 PM																	
Total	3	39	0	61	0	0	0	0	1	0	121	46	4	55	194	0	516
Approach	100				0				167				249				516
%HV	3.0%				n/a				0.6%				1.6%				1.6%
PHF	0.83				n/a				0.87				0.94				0.96

4:15 PM to 5:15 PM

Check	In:	Out:	PHF	%HV
EB	516	516	0.94	1.6%
WB	n/a	n/a	0.87	0.6%
NB	n/a	n/a	n/a	n/a
SB	0.83	3.0%	0.83	3.0%
T Int.	0.96	1.6%	0.96	1.6%

PEDES Across:

	N	S	E	W	
INT 01				0	
INT 02				0	
INT 03				0	
INT 04				0	
INT 05				0	
INT 06	NO PEDS				0
INT 07				0	
INT 08				0	
INT 09				0	
INT 10				0	
INT 11				0	
INT 12	0	0	0	0	

Bicycles From:

	N	S	E	W	
INT 01				0	
INT 02				0	
INT 03				0	
INT 04				0	
INT 05				0	
INT 06	NO BIKES				0
INT 07				0	
INT 08				0	
INT 09				0	
INT 10				0	
INT 11				0	
INT 12	0	0	0	0	

Special Notes



Prepared for: **Shea, Carr, Jewell**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

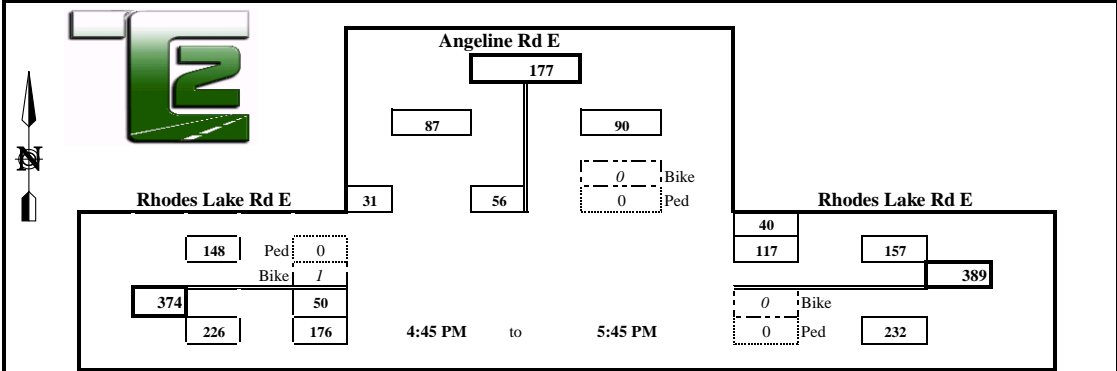
Intersection: Angeline Rd E & Rhodes Lake Rd E
 Location: Bonney Lake, Washington

Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval	From North on (SB) Angeline Rd E				From South on (NB) 0				From East on (WB) Rhodes Lake Rd E				From West on (EB) Rhodes Lake Rd E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	4	0	10	0	0	0	0	0	0	28	7	1	14	23	0	86
4:30 P	0	6	0	1	0	0	0	0	1	0	34	9	3	14	40	0	104
4:45 P	2	5	0	11	0	0	0	0	0	0	29	13	2	8	53	0	119
5:00 P	0	12	0	13	0	0	0	0	0	0	21	10	0	11	36	0	103
5:15 P	0	12	0	8	0	0	0	0	0	0	43	10	0	9	52	0	134
5:30 P	0	13	0	4	0	0	0	0	0	0	24	11	0	12	38	0	102
5:45 P	0	19	0	6	0	0	0	0	0	0	29	9	0	18	50	0	131
6:00 P	0	9	0	6	0	0	0	0	0	0	22	7	0	13	45	0	102
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	3	80	0	59	0	0	0	0	1	0	230	76	6	99	337	0	881
--------------	---	----	---	----	---	---	---	---	---	---	-----	----	---	----	-----	---	-----

Peak Hour: 4:45 PM to 5:45 PM																	
Total	0	56	0	31	0	0	0	0	0	0	117	40	0	50	176	0	470
Approach	87				0				157				226				470
%HV	n/a				n/a				n/a				n/a				0.0%
PHF	0.87				n/a				0.74				0.83				0.88



PEDs Across:				N	S	E	W	0	PHF	%HV			
INT 01								0	EB	0.83	n/a		
INT 02								0	WB	0.74	n/a		
INT 03								0	Check				
INT 04								0	In:	470	NB	n/a	n/a
INT 05								0	Out:	470	SB	0.87	n/a
INT 06	NO PEDS							0	T Int.	0.88	0.0%		
INT 07								0					
INT 08								0					
INT 09								0					
INT 10								0					
INT 11								0					
INT 12								0					

Bicycles From:				N	S	E	W	0
INT 01								0
INT 02								0
INT 03								0
INT 04								0
INT 05								0
INT 06							1	1
INT 07								0
INT 08								0
INT 09								0
INT 10								0
INT 11								0
INT 12								0
	0	0	0	0	0	0	1	1

Special Notes



Prepared for: **Transpo Group**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

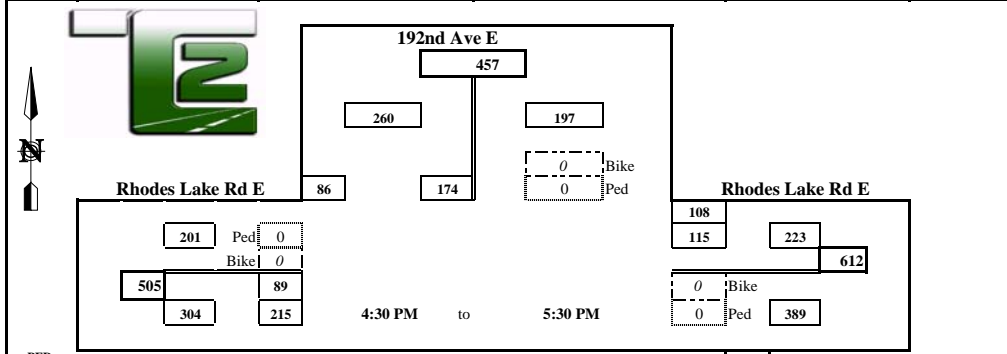
Intersection: 192nd Ave E & Rhodes Lake Rd E
Location: Bonney Lake, Washington

Date of Count: Tues 11/08/2011
Checked By: Jess

Time Interval Ending at	From North on (SB) 192nd Ave E				From South on (NB) 0				From East on (WB) Rhodes Lake Rd E				From West on (EB) Rhodes Lake Rd E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	29	0	13	0	0	0	0	3	0	27	29	2	18	32	0	148
4:30 P	2	33	0	22	0	0	0	0	4	0	33	29	5	24	41	0	182
4:45 P	2	46	0	26	0	0	0	0	3	0	36	26	2	27	53	0	214
5:00 P	0	46	0	20	0	0	0	0	0	0	32	33	1	22	50	0	203
5:15 P	0	37	0	17	0	0	0	0	0	0	22	19	1	13	44	0	152
5:30 P	0	45	0	23	0	0	0	0	1	0	25	30	0	27	68	0	218
5:45 P	0	35	0	8	0	0	0	0	0	0	18	28	0	20	50	0	159
6:00 P	0	22	0	15	0	0	0	0	0	0	27	20	0	20	63	0	167
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	4	293	0	144	0	0	0	0	11	0	220	214	11	171	401	0	1443
Peak Hour: 4:30 PM to 5:30 PM																	

Total	2	174	0	86	0	0	0	0	4	0	115	108	4	89	215	0	787
Approach	260				0				223				304				787
%HV	0.8%				n/a				1.8%				1.3%				1.3%
PHF	0.90				n/a				0.86				0.80				0.90



PEDs Across:		N	S	E	W	0	0	0	0	0	0	0	0	0	0	0	0	0
INT 01						0												
INT 02						0												
INT 03						0												
INT 04						0												
INT 05						0												
INT 06	NO PEDS					0												
INT 07						0												
INT 08						0												
INT 09						0												
INT 10						0												
INT 11						0												
INT 12						0												
		0	0	0	0	0												

Special Notes

Bicycles From:		N	S	E	W	0	0	0	0	0	0	0	0	0	0	0	0	0
INT 01						0												
INT 02						0												
INT 03						0												
INT 04						0												
INT 05						0												
INT 06	NO BIKES					0												
INT 07						0												
INT 08						0												
INT 09						0												
INT 10						0												
INT 11						0												
INT 12						0												
		0	0	0	0	0												

872 1.0 PHF Peak Hour Volume

PHF %HV		EB	0.80	1.3%
Check	WB	0.86	1.8%	
In:	787	NB	n/a	n/a
Out:	787	SB	0.90	0.8%
T Int.			0.90	1.3%

Conditions:



Prepared for: **Shea, Carr, Jewell**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: 192nd Ave E & 109th St E
 Location: Bonney Lake, Washington

Date of Count: Tues 9/11/2012
 Checked By: Jess

Time Interval	From North on (SB) 192nd Ave E				From South on (NB) 192nd Ave E				From East on (WB) 109th St E				From West on (EB) 109th St E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	85	5	2	0	50	1	0	0	0	1	0	0	0	1	143
4:30 P	1	3	66	9	6	1	41	0	0	0	0	0	1	0	0	0	121
4:45 P	0	4	69	4	4	0	43	1	0	0	0	3	0	2	0	0	126
5:00 P	1	7	70	6	1	1	38	0	0	0	0	2	0	0	0	1	125
5:15 P	0	0	74	5	0	1	46	1	0	0	0	2	1	4	0	1	134
5:30 P	0	3	63	6	0	1	45	0	0	1	0	0	3	0	0	0	122
5:45 P	0	3	48	4	0	0	45	0	0	0	0	1	0	4	0	1	106
6:00 P	0	7	72	8	0	1	41	0	0	0	0	0	6	0	0	0	135
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	2	27	547	47	13	5	349	3	0	1	0	9	1	20	0	4	1012
Peak Hour: 4:00 PM to 5:00 PM																	
Total	2	14	290	24	13	2	172	2	0	0	0	6	0	3	0	2	515
Approach	328				176				6				5				515
%HV	0.6%				7.4%				n/a				n/a				2.9%
PHF	0.91				0.86				0.50				0.63				0.90

192nd Ave E
 509
 328
 181
 24 290 14
 0 Bike
 0 Ped

109th St E
 26 Ped 4
 0 Bike
 31 3
 5 2

109th St E
 6
 0
 0
 2 Bike
 1 Ped 16

4:00 PM to 5:00 PM

192nd Ave E
 292
 176
 468

192nd Ave E
 N S E W
 Bicycles From:

INT 01					2
INT 02		2			0
INT 03			2		2
INT 04					0
INT 05				2	2
INT 06					0
INT 07		1			1
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
Total	0	3	2	2	7

PHF %HV
 EB 0.63 n/a
 WB 0.50 n/a
 In: 515 NB 0.86 7.4%
 Out: 515 SB 0.91 0.6%
 T Int. 0.90 2.9%

Check Conditions:

Special Notes



Prepared for: **Transpo Group**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: 200th Ave Ct E/199th Ave Ct E & 104th St E

Date of Count: Tues 11/08/2011

Location: Bonney Lake, Washington

Checked By: Jess

Time Interval	From North on (SB) 200th Ave Ct E				From South on (NB) 199th Ave Ct E				From East on (WB) 104th St E				From West on (EB) 104th St E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	7	1	18	58	0	12	22	0	0	0	1	0	1	47	0	7	166
4:30 P	5	1	12	71	0	4	11	0	0	0	0	2	0	50	0	2	153
4:45 P	8	1	15	66	0	6	21	0	0	0	0	0	0	66	0	6	181
5:00 P	3	1	31	77	0	7	15	0	0	0	0	0	1	73	0	9	213
5:15 P	1	4	27	75	0	9	19	0	0	0	0	2	1	34	1	8	179
5:30 P	2	1	40	57	0	3	10	0	0	0	0	0	2	41	0	14	166
5:45 P	0	0	11	47	0	2	8	0	0	0	0	0	0	54	0	5	127
6:00 P	1	3	15	51	0	2	6	1	0	0	1	0	0	28	1	7	115
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	27	12	169	502	0	45	112	1	0	0	2	4	5	393	2	58	1300
Peak Hour: 4:30 PM to 5:30 PM																	

Total	14	7	113	275	0	25	65	0	0	0	0	2	4	214	1	37	739
Approach	395				90				2				252				739
%HV	3.5%				n/a				n/a				1.6%				2.4%
PHF	0.91				0.80				0.25				0.77				0.87

200th Ave Ct E
 676
 395
 281
 0 Bike
 2 Ped

104th St E
 275 113 7
 2
 0
 0
 0 Bike
 0 Ped 8

104th St E
 300 Ped 0
 Bike 0
 552
 252
 214
 1
 37

4:30 PM to 5:30 PM

199th Ave Ct E
 25 65 0
 150
 90
 240

104th St E
 2
 0
 0
 0 Bike
 0 Ped 8

1.0 PHF Peak Hour Volume

Check	PHF	%HV
EB	0.77	1.6%
WB	0.25	n/a
In: 739	NB	0.80
Out: 739	SB	0.91
T Int.	0.87	2.4%

Conditions:

Bicycles From:	N	S	E	W
INT 01				0
INT 02				0
INT 03				0
INT 04				0
INT 05		1		1
INT 06				0
INT 07				0
INT 08	1			1
INT 09				0
INT 10				0
INT 11				0
INT 12				0
	1	1	0	0

PEDs Across:

	N	S	E	W
INT 01		2		2
INT 02		1		1
INT 03	2			2
INT 04				0
INT 05				0
INT 06				0
INT 07				0
INT 08				0
INT 09				0
INT 10				0
INT 11				0
INT 12				0
	2	3	0	0

Special Notes

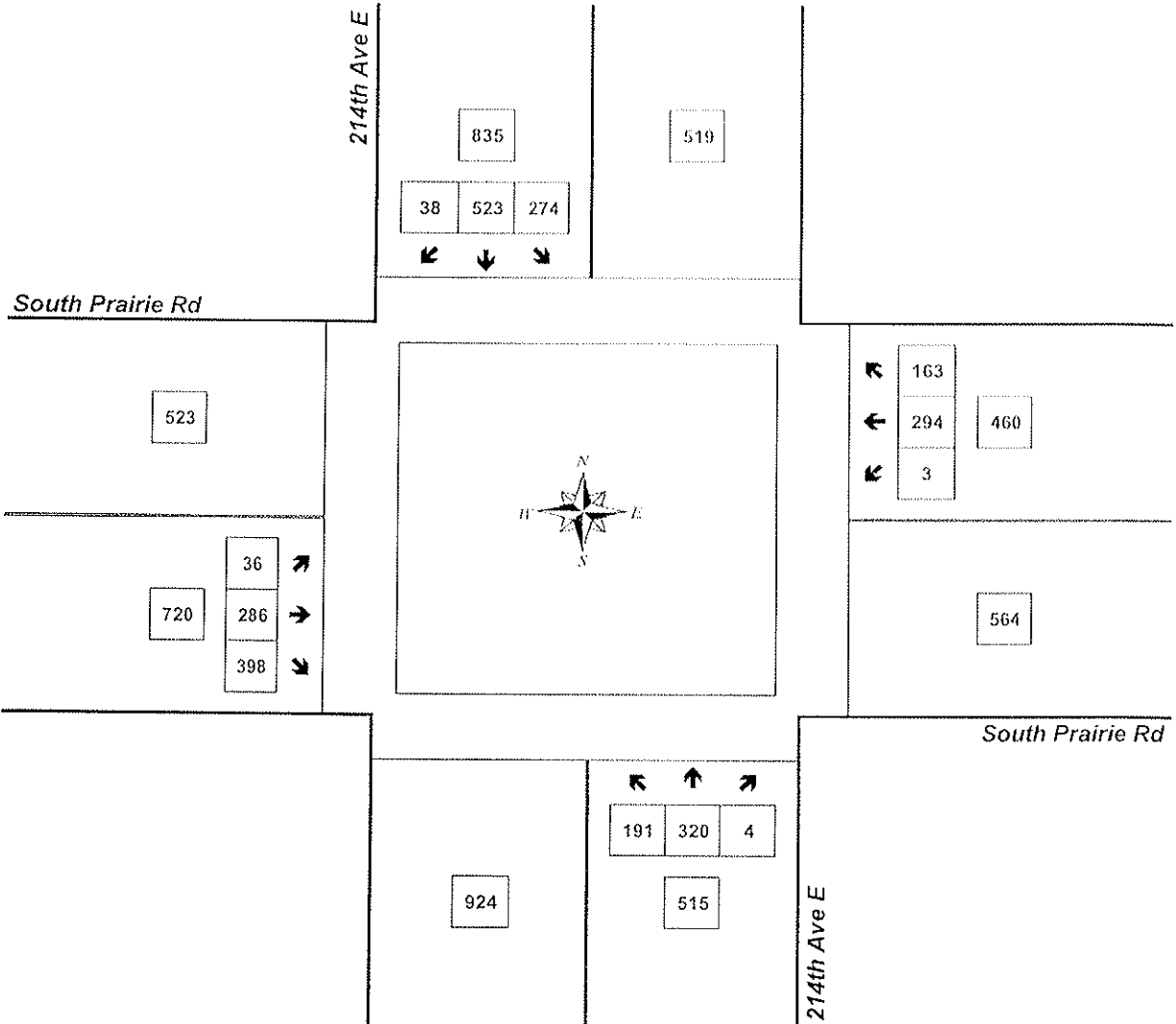
Peak Hour Summary



Mark Skaggs
(206) 261-0300

214th Ave E & South Prairie Rd

4:30 PM to 5:30 PM
Tuesday, May 03, 2011



Approach	PHF	HV%	Volume
EB	0.87	1.0%	720
WB	0.86	2.0%	460
NB	0.88	1.4%	515
SB	0.87	0.5%	835
Intersection	0.94	1.1%	2,530

Count Period: 4:00 PM to 6:00 PM



Prepared for: **Transpo Group**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

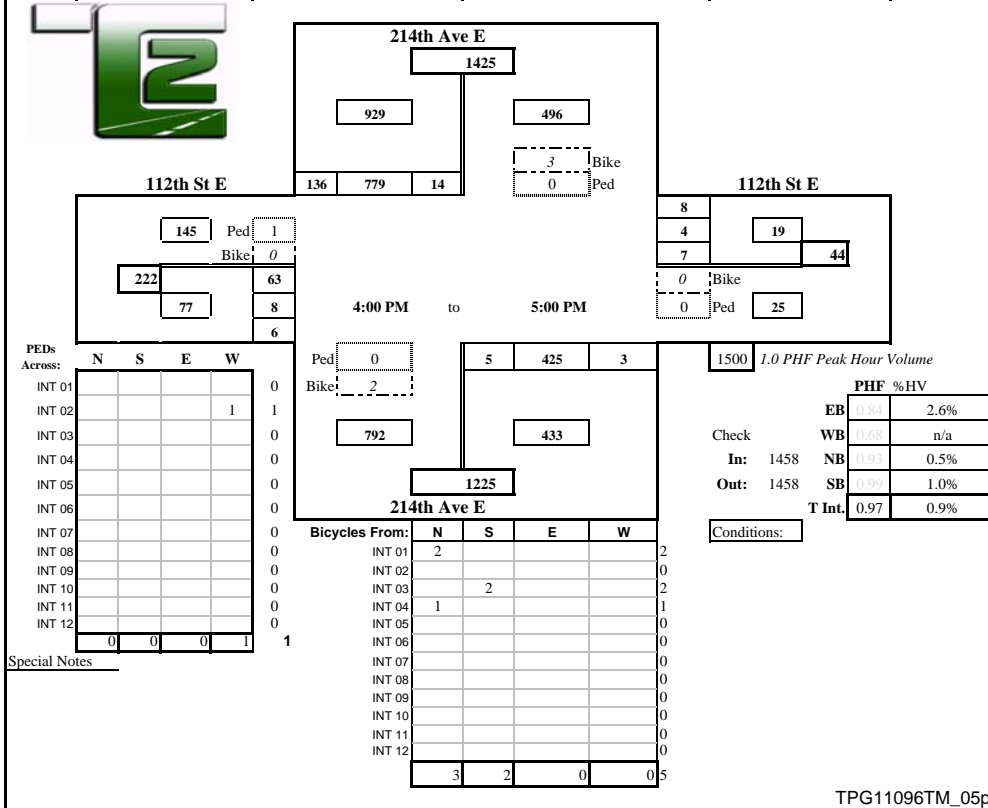
Intersection: 214th Ave E & 112th St E
 Location: Bonney Lake, Washington

Date of Count: Tues 11/08/2011
 Checked By: Jess

Time Interval Ending at	From North on (SB) 214th Ave E				From South on (NB) 214th Ave E				From East on (WB) 112th St E				From West on (EB) 112th St E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	3	188	44	0	2	99	1	0	3	2	1	2	14	5	2	364
4:30 P	2	1	206	28	0	1	109	1	0	1	0	1	0	17	0	1	366
4:45 P	3	5	198	26	2	2	114	0	0	1	2	4	0	20	1	2	375
5:00 P	2	5	187	38	0	0	103	1	0	2	0	2	0	12	2	1	353
5:15 P	1	6	182	30	2	3	114	0	0	0	1	2	0	16	0	1	355
5:30 P	4	3	200	38	0	3	90	0	0	3	0	0	0	15	2	2	356
5:45 P	0	5	190	29	0	3	99	2	0	1	2	2	0	22	0	2	357
6:00 P	0	2	178	38	0	2	89	1	0	0	0	0	0	9	1	2	322
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	14	30	1529	271	4	16	817	6	0	11	7	12	2	125	11	13	2848
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Peak Hour: 4:00 PM to 5:00 PM																	
Total	9	14	779	136	2	5	425	3	0	7	4	8	2	63	8	6	1458
Approach	929				433				19				77				1458
%HV	1.0%				0.5%				n/a				2.6%				0.9%
PHF	0.99				0.93				0.68				0.84				0.97





Prepared for: **Transpo Group**
Traffic Count Consultants, Inc.

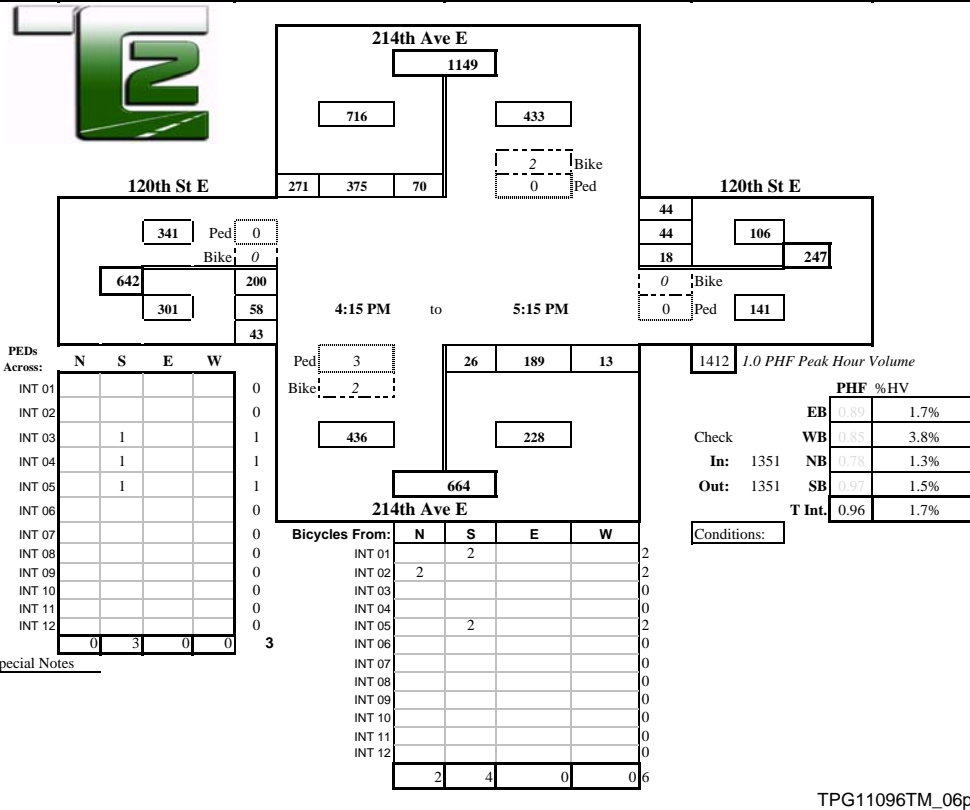
Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: 214th Ave E & 120th St E
 Location: Bonney Lake, Washington

Date of Count: Tues 11/08/2011
 Checked By: Jess

Time Interval Ending at	From North on (SB) 214th Ave E				From South on (NB) 214th Ave E				From East on (WB) 120th St E				From West on (EB) 120th St E				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	3	10	90	79	3	4	35	4	2	4	15	12	0	36	15	9	313
4:30 P	4	18	97	70	1	9	59	5	0	5	9	9	3	54	9	9	353
4:45 P	5	14	100	67	1	7	43	2	2	5	16	10	0	46	17	9	336
5:00 P	1	16	90	62	0	6	40	2	1	7	9	11	0	56	15	14	328
5:15 P	1	22	88	72	1	4	47	4	1	1	10	14	2	44	17	11	334
5:30 P	4	18	81	80	1	6	41	3	1	3	12	13	1	34	13	8	312
5:45 P	0	19	89	70	1	7	47	7	1	6	10	9	0	39	17	15	335
6:00 P	2	15	77	69	0	4	34	1	0	4	6	14	0	42	20	11	297
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	20	132	712	569	8	47	346	28	8	35	87	92	6	351	123	86	2608
Peak Hour: 4:15 PM to 5:15 PM																	
Total	11	70	375	271	3	26	189	13	4	18	44	44	5	200	58	43	1351
Approach	716				228				106				301				1351
%HV	1.5%				1.3%				3.8%				1.7%				1.7%
PHF	0.97				0.78				0.85				0.89				0.96





Prepared for: **SCJ Alliance**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Veterans Memorial Hwy/Summer Buckley Hwy & Angeline Rd E (Parnell Rd)
Location: Bonney Lake, Washington

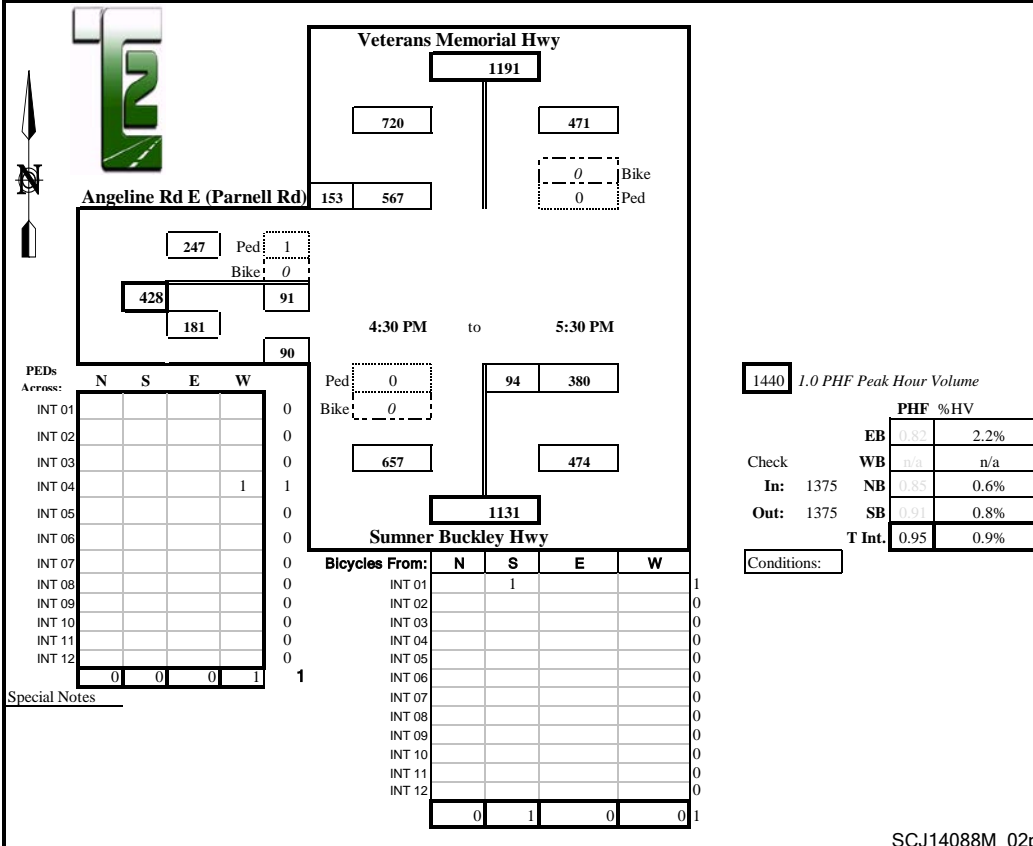
Date of Count: Thrus 9/11/2014
Checked By: Jess

Time Interval Ending at	From North on (SB) Veterans Memorial Hwy				From South on (NB) Summer Buckley Hwy				From East on (WB) 0				From West on (EB) Angeline Rd E (Parnell Rd)				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	0	103	35	0	18	84	0	0	0	0	0	0	20	0	24	284
4:30 P	1	0	129	39	2	36	76	0	0	0	0	0	17	0	22	319	
4:45 P	4	0	151	46	0	19	84	0	0	0	0	2	21	0	18	339	
5:00 P	1	0	125	30	3	33	106	0	0	0	0	2	25	0	30	349	
5:15 P	1	0	142	39	0	13	89	0	0	0	0	0	19	0	25	327	
5:30 P	0	0	149	38	0	29	101	0	0	0	0	0	26	0	17	360	
5:45 P	1	0	116	38	1	23	104	0	0	0	0	2	14	0	25	320	
6:00 P	0	0	127	51	0	30	96	0	0	0	0	0	16	0	25	345	
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Total Survey	9	0	1042	316	6	201	740	0	0	0	0	0	6	158	0	186	2643
--------------	---	---	------	-----	---	-----	-----	---	---	---	---	---	---	-----	---	-----	------

Peak Hour: 4:30 PM to 5:30 PM

Total	6	0	567	153	3	94	380	0	0	0	0	0	4	91	0	90	1375
Approach	720				474				0				181				1375
%HV	0.8%				0.6%				n/a				2.2%				0.9%
PHF	0.91				0.85				n/a				0.82				0.95





Prepared for: **SCJ Alliance**
Traffic Count Consultants, Inc.

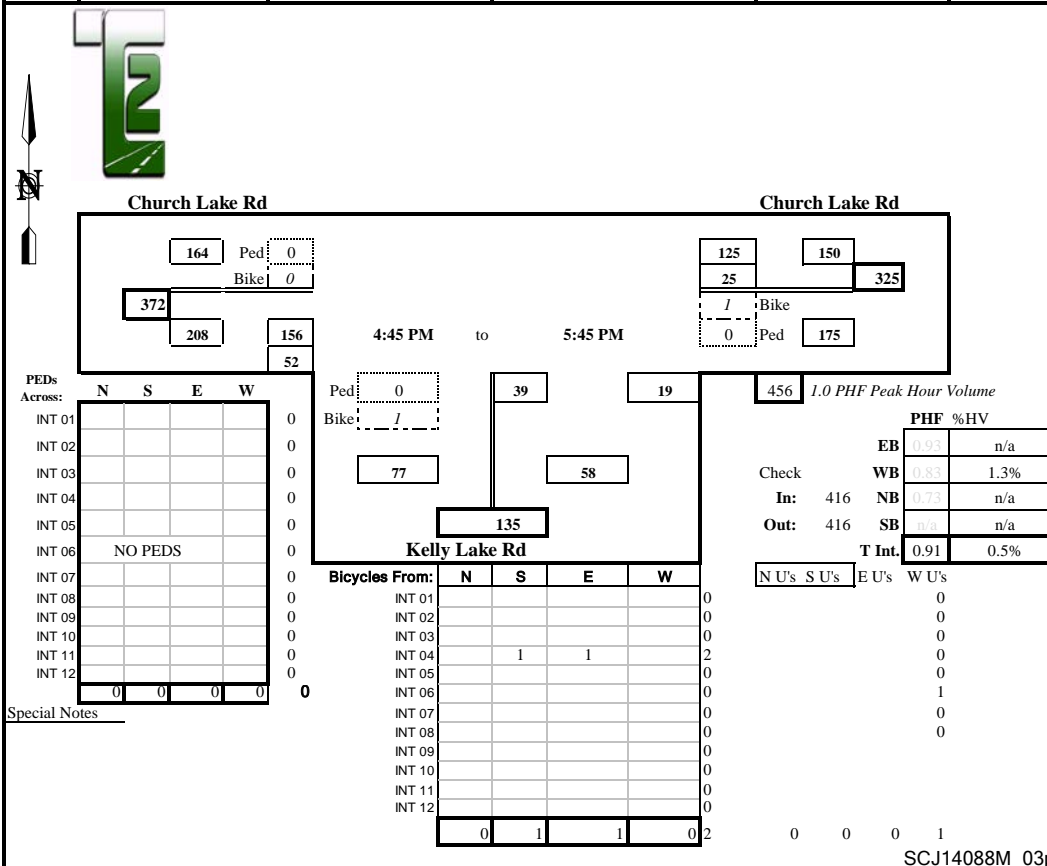
Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Kelly Lake Rd & Church Lake Rd
Location: Bonney Lake, Washington

Date of Count: Thurs 9/11/2014
Checked By: Jess

Time Interval	From North on (SB)				From South on (NB)				From East on (WB)				From West on (EB)				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	0	0	0	18	0	4	0	9	28	0	0	0	32	10	101
4:30 P	0	0	0	0	1	13	0	8	1	8	32	0	2	0	35	14	110
4:45 P	0	0	0	0	0	10	0	9	1	7	28	0	2	0	38	11	103
5:00 P	0	0	0	0	0	7	0	4	1	4	32	0	0	0	35	13	95
5:15 P	0	0	0	0	0	10	0	2	1	5	29	0	0	0	37	18	101
5:30 P	0	0	0	0	0	10	0	5	0	7	28	0	0	0	45	11	106
5:45 P	0	0	0	0	0	12	0	8	0	9	36	0	0	0	39	10	114
6:00 P	0	0	0	0	0	8	0	8	0	4	29	0	0	0	31	15	95
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	1	88	0	48	4	53	242	0	4	0	292	102	825
Peak Hour: 4:45 PM to 5:45 PM																	
Total	0	0	0	0	0	39	0	19	2	25	125	0	0	0	156	52	416
Approach	0				58				150				208				416
%HV	n/a				n/a				1.3%				n/a				0.5%
PHF	n/a				0.73				0.83				0.93				0.91





Prepared for: **SCJ Alliance**
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WBE/DBE

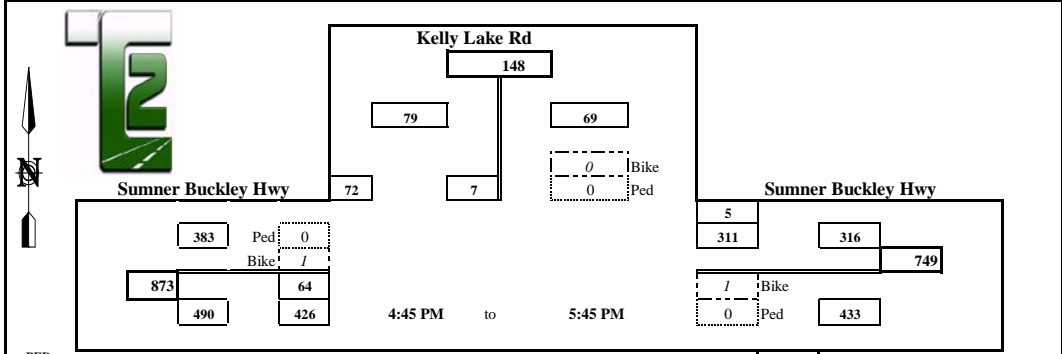
Intersection: Kelly Lake Rd & Old Sumner Buckley Hwy
Location: Bonney Lake, Washington

Date of Count: Thurs 9/11/2014
Checked By: Jess

Time Interval	From North on (SB) Kelly Lake Rd				From South on (NB) 0				From East on (WB) Sumner Buckley Hwy				From West on (EB) Sumner Buckley Hwy				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	0	16	0	0	0	0	0	0	69	0	0	22	72	0	179
4:30 P	0	2	0	23	0	0	0	0	1	0	63	2	1	20	108	0	218
4:45 P	0	2	0	14	0	0	0	0	1	0	71	2	0	16	94	0	199
5:00 P	0	1	0	17	0	0	0	0	2	0	88	2	1	10	101	0	219
5:15 P	0	2	0	20	0	0	0	0	1	0	56	1	1	19	113	0	211
5:30 P	0	3	0	17	0	0	0	0	0	0	80	0	0	14	114	0	228
5:45 P	0	1	0	18	0	0	0	0	0	0	87	2	0	21	98	0	227
6:00 P	0	3	0	16	0	0	0	0	0	0	60	1	0	12	92	0	184
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	0	14	0	141	0	0	0	0	5	0	574	10	3	134	792	0	1665
Peak Hour: 4:45 PM to 5:45 PM																	

Total	0	7	0	72	0	0	0	0	3	0	311	5	2	64	426	0	885
Approach	79				0				316				490				885
%HV	n/a				n/a				0.9%				0.4%				0.6%
PHF	0.90				n/a				0.88				0.93				0.97



912 1.0 PHF Peak Hour Volume

Check	In:	Out:	T Int.	PHF	%HV
				EB	WB
	885	885		0.93	0.4%
				0.88	0.9%
				n/a	n/a
				0.90	n/a
				0.97	0.6%

Conditions:

Bicycles From:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04			1	1	2
INT 05					0
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
Total	0	0	1	1	2

Special Notes

SCJ14088M_04p



Traffic Volume Calculation Worksheets



Traffic Volume Calculation Worksheet
Bonney Lake Mobility Element - Comprehensive Plan
PM Peak Hour Volumes

Intersection	Movement		A	B	C	D	E	F	G	H
			EXISTING	EXISTING	2035	2035	2035	2035 Model With Planned Improvements		PROJECTED
			VOLUMES	MODEL	MODEL	MODEL	MODEL	% GROWTH	ADJUST	ADJUST
1 Myers Rd 77th Ave TMC Date: 09/11/12 2012	EB	L	0	-	-	-	-	-	-	0
		T	0	-	-	-	-	-	-	0
	WB	L	7	191	172	-19	-10%	-	-	6
		T	0	-	-	-	-	-	-	0
	NB	R	15	26	27	1	4%	-	-	16
		L	0	-	-	-	-	-	-	0
	SB	T	120	244	308	64	26%	-	-	151
		R	25	321	313	-8	-2%	-	-	24
		L	41	53	80	27	51%	-	-	62
		T	120	236	202	-34	-14%	-	-	103
	R	0	-	-	-	-	-	-	0	
			328	1,071					362	
2 Locust Ave Bonney Lake Blvd TMC Date: 09/13/12 2012	EB	L	4	-	-	-	-	30%	-	5
		T	41	97	164	67	69%	-	-	69
	WB	R	56	22	161	139	632%	-	130	186
		L	76	115	110	-5	-4%	-	-	73
	NB	T	31	62	55	-7	-11%	-	-	28
		R	1	-	-	-	-	30%	-	1
	SB	L	30	0	1	1	-	30%	-	39
		T	29	-	-	-	-	30%	-	38
		R	68	97	106	9	9%	-	-	74
		L	1	-	-	-	-	30%	-	1
	T	29	-	-	-	-	30%	-	38	
	R	2	-	-	-	-	30%	-	3	
			368	393					555	
3 W Tapps Hwy Bonney Lake Blvd TMC Date: 08/28/14 2014	EB	L	22	12	10	-2	-17%	-	-	18
		T	0	-	-	-	-	-	-	0
	WB	R	54	152	234	82	54%	-	-	83
		L	0	-	-	-	-	-	-	0
	NB	T	0	-	-	-	-	-	-	0
		R	0	-	-	-	-	-	-	0
	SB	L	37	126	122	-4	-3%	-	-	36
		T	134	86	101	15	17%	-	-	157
		R	0	-	-	-	-	-	-	0
		L	0	-	-	-	-	-	-	0
	T	207	195	345	150	77%	-	-	366	
	R	48	13	14	1	8%	-	-	52	
			502	584					712	
4 West Tapps Hwy Church Lake Rd TMC Date: 09/11/12 2012	EB	L	83	36	58	22	61%	-	-	134
		T	22	87	43	-44	-51%	48%	-	33
	WB	R	0	-	-	-	-	-	-	0
		L	0	-	-	-	-	-	-	0
	NB	T	34	53	98	45	85%	-	-	63
		R	114	132	140	8	6%	-	-	121
	SB	L	0	-	-	-	-	-	-	0
		T	0	-	-	-	-	-	-	0
		R	0	-	-	-	-	-	-	0
		L	164	111	321	210	189%	-	224	388
	T	0	-	-	-	-	-	-	0	
	R	105	69	67	-2	-3%	48%	-	156	
			522	488					895	
5 214th Ave Connells Prairie Rd TMC Date: 09/11/12 2012	EB	L	0	-	-	-	-	-	-	0
		T	0	-	-	-	-	-	-	0
	WB	R	0	-	-	-	-	-	-	0
		L	44	54	66	12	22%	-	-	54
	NB	T	0	-	-	-	-	-	-	0
		R	18	14	13	-1	-7%	-	-	17
	SB	L	0	-	-	-	-	-	-	0
		T	339	190	210	20	11%	48%	-	502
		R	45	72	85	13	18%	-	-	53
		L	28	30	32	2	7%	-	-	30
	T	610	343	519	176	51%	-	-	923	
	R	0	-	-	-	-	-	-	0	
			1,084	703					1,579	
6 214th Ave Kelley Lake Rd TMC Date: 09/11/12 2012	EB	L	31	30	56	26	87%	-	-	58
		T	0	-	-	-	-	-	-	0
	WB	R	163	116	217	101	87%	-	-	305
		L	0	-	-	-	-	-	-	0
	NB	T	0	-	-	-	-	-	-	0
		R	0	-	-	-	-	-	-	0
	SB	L	120	180	217	37	21%	-	-	145
		T	348	232	240	8	3%	48%	-	516
		R	0	-	-	-	-	-	-	0
		L	0	-	-	-	-	-	-	0
	T	601	356	507	151	42%	-	-	856	
	R	50	40	78	38	95%	-	-	98	
			1,313	954					1,578	



Traffic Volume Calculation Worksheet
Bonney Lake Mobility Element - Comprehensive Plan
PM Peak Hour Volumes

Intersection	Movement	A	B	C	D	E	F	G	H
		EXISTING	EXISTING	2035	2035	2035	2035 Model With Planned Improvements		PROJECTED
		VOLUMES	VOLUMES	MODEL	MODEL	MODEL	% GROWTH	ADJUST	2035
7 214th Ave Sumner-Buckley Hwy TMC Date: 05/03/11 2011	L	194	157	148	-9	-6%	48%		287
	EB T	147	136	153	17	13%			165
	R	72	0	60	60	-	48%		107
	L	20	8	6	-2	-25%			15
	WB T	72	87	69	-18	-21%			57
	R	34	57	50	-7	-12%			30
	L	24	7	14	7	100%		9	33
	NB T	297	197	258	61	31%			389
	R	32	10	7	-3	-30%			22
	L	57	45	58	13	29%			73
SB T	498	266	436	170	64%			816	
R	151	162	230	68	42%			214	
		1,598	1,132						2,208
8 214th Ave 96th St TMC Date: 09/11/12 2012	L	16	-	-	-	-	30%		21
	EB T	10	-	-	-	-	30%		13
	R	45	-	-	-	-	30%		58
	L	35	76	184	108	142%			85
	WB T	5	-	-	-	-	30%		6
	R	8	25	61	36	144%			20
	L	24	-	-	-	-	30%		31
	NB T	309	189	218	29	15%			356
	R	43	116	136	20	17%			50
	L	16	26	136	110	423%			84
SB T	573	247	366	119	48%			849	
R	12	-	-	-	-	30%		16	
		1,096	679						1,589
9 SR 410 Sumner-Buckley Hwy TMC Date: 05/03/11 2011	L	554	158	340	182	115%	106%		1,141
	EB T	1,932	2,236	2,531	295	13%			2,187
	R	6	-	-	-	-		120	132
	L	3	-	-	-	-		60	66
	WB T	1,275	1,424	1,620	196	14%			1,450
	R	31	0	0	0	-	106%		64
	L	4	-	-	-	-		60	68
	NB T	1	-	-	-	-		10	12
	R	2	-	-	-	-		30	34
	L	53	0	0	0	-	106%		109
SB T	4	-	-	-	-		20	28	
R	289	34	194	160	-	106%		595	
		4,154	3,852						5,887
10 Sumner-Buckley Hwy 184th Ave TMC Date: 09/11/12 2012	L	58	-	-	-	-	106%		120
	EB T	433	158	340	182	115%		335	768
	R	15	0	0	0	-	106%		31
	L	34	17	24	7	41%			48
	WB T	549	34	194	160	471%		294	843
	R	38	-	-	-	-	106%		78
	L	42	0	0	0	-	106%		87
	NB T	62	-	-	-	-	106%		128
	R	15	15	30	15	100%			30
	L	21	-	-	-	-	106%		43
SB T	33	-	-	-	-	106%		68	
R	94	-	-	-	-	106%		194	
		1,394	224						2,438
11 Sumner-Buckley Hwy Locust Ave TMC Date: 05/03/11 2011	L	156	20	29	9	45%			226
	EB T	532	106	274	168	158%		274	806
	R	24	-	-	-	-	30%		31
	L	37	-	-	-	-	30%		48
	WB T	302	38	141	103	271%		168	470
	R	167	177	206	29	16%			194
	L	16	-	-	-	-	30%		21
	NB T	12	-	-	-	-	30%		16
	R	30	-	-	-	-	30%		39
	L	141	208	345	137	66%			234
SB T	15	-	-	-	-	30%		20	
R	121	22	42	20	91%			231	
		1,553	571						2,336



Traffic Volume Calculation Worksheet
Bonney Lake Mobility Element - Comprehensive Plan
PM Peak Hour Volumes

Intersection	Movement		A	B	C	D	2035 Model With Planned Improvements			H
			EXISTING	EXISTING	2035	2035	2035	2035 Model	2035 Model	PROJECTED
			VOLUMES	VOLUMES	MODEL	MODEL	MODEL	% GROWTH	ADJUST	MODEL
12 SR 410 184th Ave TMC Date: 05/03/11 2011	L		32	0	0	0	-	106%		66
	EB	T	1,630	1,839	2,182	343	19%			1,934
		R	220	397	350	-47	-12%	58%		349
		L	169	106	112	6	6%	58%		179
	WB	T	1,122	1196	1504	308	26%			1,411
		R	92	33	67	34	103%		33	125
		L	137	173	113	-60	-35%	58%		217
	NB	T	88	24	43	19	79%			158
		R	131	75	168	93	124%		91	222
		L	146	41	73	32	78%			260
	SB	T	99	34	43	9	26%			125
	R	4	55	2	-53	-96%	23%		5	
			3,870	3,973						5,051
13 192nd Ave SR 410 TMC Date: 01/03/12 2012	L		103	355	156	-199	-56%	48%		153
	EB	T	1,911	1,600	1,999	399	24%			2,365
		R	162	-	267	-	-	48%		240
		L	66	-	0	-	-	48%		98
	WB	T	1,287	1336	1361	25	24%			1,593
		R	203	117	140	23	20%			243
		L	152	-	320	-	-	48%		246
	NB	T	157	-	0	-	-	48%		254
		R	30	-	0	-	-	48%		49
		L	243	0	0	0	-	48%		360
	SB	T	120	-	0	-	-	48%		178
	R	103	0	2	2	-	48%		153	
			4,537	3,408						5,932
14 195th Ave SR 410 TMC Date: 08/24/10 2010	L		8	-	-	-	-	48%		12
	EB	T	1,986	-	-	-	24%			2,458
		R	72	-	-	-	-	48%		107
		L	218	-	-	-	-	48%		323
	WB	T	1,418	-	-	-	24%			1,755
		R	7	-	-	-	-	48%		10
		L	61	-	-	-	-	48%		90
	NB	T	1	-	-	-	-	48%		1
		R	226	-	-	-	-	48%		335
		L	15	-	-	-	-	48%		22
	SB	T	2	-	-	-	-	48%		3
	R	8	-	-	-	-	48%		12	
			4,022	0						5,128
15 SR 410 198th Ave (South Prairie Rd) TMC Date: 05/03/11 2011	L		54	0	0	0	-	48%		80
	EB	T	1,175	766	1,000	234	31%			1,534
		R	906	834	999	165	20%			1,085
		L	134	36	49	13	36%			182
	WB	T	941	460	684	224	49%			1,399
		R	54	0	0	0	-	48%		80
		L	594	579	548	-31	-5%	12%		665
	NB	T	106	131	236	105	80%			191
		R	75	46	46	0	0%	23%		92
		L	88	54	49	-5	-9%	48%		130
	SB	T	115	259	624	365	141%			277
	R	37	414	268	-146	-35%	48%		55	
			4,279	3,579						5,770
16 S Prairie Rd 200th Ave Ct TMC Date: 05/03/11 2011	L		104	-	-	-	-	62%		169
	EB	T	646	655	590	-65	-10%	12%		724
		R	408	474	1,082	608	128%			931
		L	47	119	86	-33	-28%	23%		58
	WB	T	402	384	380	-4	-1%	12%		450
		R	37	-	-	-	-	62%		60
		L	267	372	450	78	21%			323
	NB	T	58	-	-	-	-	62%		94
		R	58	187	138	-49	-26%	23%		71
		L	94	-	-	-	-	62%		152
	SB	T	68	-	-	-	-	62%		110
	R	41	-	-	-	-	62%		66	
			2,230	2,191						3,208



Traffic Volume Calculation Worksheet
 Bonney Lake Mobility Element - Comprehensive Plan
 PM Peak Hour Volumes

Intersection	Movement		A	B	C	D	2035 Model With Planned Improvements			H
			EXISTING	EXISTING	2035	2035	2035	2035 Model	2035 Model	PROJECTED
			VOLUMES	MODEL	MODEL	MODEL	% GROWTH	ADJUST	MODEL	2035
		VOLUMES	VOLUMES	VOLUMES	Δ GROWTH	% GROWTH	ADJUST	ADJUST	VOLUMES	
17 208th Ave SR 410 TMC Date: 12/13/11 2011	L		117	0	-	-	-	12%		131
	EB	T	1,328	0	-	-	24%			1,644
		R	224	0	-	-	-	12%		251
		L	87	0	-	-	-	48%		129
	WB	T	991	0	-	-	24%			1,227
		R	39	0	-	-	-	48%		58
		L	203	0	-	-	-	12%		227
	NB	T	25	0	-	-	-	48%		37
		R	112	0	-	-	-	12%		125
		L	61	0	-	-	-	48%		90
	SB	38	0	-	-	-	48%		56	
	R	30	0	-	-	-	48%		44	
			3,255	0						4,019
18 211th Ave SR 410 TMC Date: 01/04/11 2011	L		38	0	-	-	-	48%		56
	EB	T	1,103	0	-	-	24%			1,365
		R	114	0	-	-	-	48%		169
		L	158	0	-	-	-	48%		234
	WB	T	786	0	-	-	24%			973
		R	36	0	-	-	-	48%		53
		L	159	0	-	-	-	48%		236
	NB	T	7	0	-	-	-	48%		10
		R	154	0	-	-	-	48%		228
		L	39	0	-	-	-	48%		58
	SB	7	0	-	-	-	48%		10	
	R	20	0	-	-	-	48%		30	
			2,621	0						3,422
19 214th Ave SR 410 TMC Date: 01/18/11 2011	L		276	95	74	-21	-22%	30%	-60	298
	EB	T	720	818	1,128	310	38%		60	1,053
		R	266	172	108	-64	-37%	30%		345
		L	184	69	143	74	107%		95	279
	WB	T	610	434	738	304	70%		40	1,077
		R	37	49	115	66	135%			87
		L	212	165	52	-113	-68%	30%		275
	NB	T	182	162	165	3	2%	30%		236
		R	85	40	98	58	145%			208
		L	123	73	159	86	118%		-60	208
	SB	383	196	277	81	41%			541	
	R	165	54	115	61	113%		38	203	
			3,243	2,327						4,810
20 233rd Ave SR 410 TMC Date: 04/17/12 2012	L		27	0	28	28	-	30%		35
	EB	T	634	468	635	167	36%			860
		R	208	182	354	172	95%			405
		L	85	28	0	-28	-	30%		110
	WB	T	653	402	662	260	65%	24%	40	848
		R	27	18	39	21	117%		-40	59
		L	98	149	154	5	3%	30%		101
	NB	T	21	23	26	3	13%			24
		R	6	31	0	-31	-	30%		8
		L	20	16	46	30	188%			58
	SB	29	59	141	82	139%			69	
	R	20	11	29	18	164%			53	
			1,828	1,387						2,630
21 Sky Island Dr Rhodes Lake Rd TMC Date: 09/11/12 2012	L		55	82	132	50	61%			89
	EB	T	194	231	774	543	235%			650
		R	0	-	-	-	-			0
		L	0	-	-	-	-			0
	WB	T	121	181	420	239	132%			281
		R	46	5	29	24	480%		16	62
		L	0	-	-	-	-			0
	NB	T	0	-	-	-	-			0
		R	0	-	-	-	-			0
		L	39	38	32	-6	-16%	23%		48
	SB	0	-	-	-	-			0	
	R	61	159	163	4	3%	58%	36	97	
			516	696						1,227



Traffic Volume Calculation Worksheet
Bonney Lake Mobility Element - Comprehensive Plan
PM Peak Hour Volumes

Intersection	Movement	A	B	C	D	E	F	G	H
		EXISTING	EXISTING	2035	2035	2035	2035 Model With Planned Improvements		PROJECTED
		VOLUMES	VOLUMES	MODEL	MODEL	MODEL	% GROWTH	ADJUST	MODEL
22 Angeline Rd Rhodes Lake Rd TMC Date: 09/11/12 2012	L	50	62	28	-34	-55%	58%		79
	EB T	176	136	777	641	471%			1,006
	R	0	-	-	-	-			0
	L	0	-	-	-	-			0
	WB T	117	116	442	326	281%			446
	R	40	111	242	131	118%			87
	L	0	-	-	-	-			0
	NB T	0	-	-	-	-			0
	R	0	-	-	-	-			0
	L	56	60	117	57	95%			109
SB T	0	-	-	-	-			0	
R	31	82	7	-75	-91%	58%		49	
		470	567						1,776
23 Rhodes Lake Rd 192nd Ave TMC Date: 11/08/11 2011	L	89	44	320	276	627%		345	434
	EB T	215	153	88	-65	-42%		-81	134
	R	0	-	-	-	-			0
	L	0	-	-	-	-			0
	WB T	115	145	100	-45	-31%			79
	R	108	24	0	-24	-100%		-30	78
	L	0	-	-	-	-			0
	NB T	0	-	-	-	-			0
	R	0	-	-	-	-			0
	L	174	142	0	-142	-100%	-31%		120
SB T	0	-	-	-	-			0	
R	86	82	267	185	226%			280	
		787	590						1,125
24 192nd Ave 109th St TMC Date: 09/11/12 2012	L	3	0	-	-	-	62%		5
	EB T	0	0	-	-	-	62%		0
	R	2	0	-	-	-	62%		3
	L	0	0	-	-	-	62%		0
	WB T	0	0	-	-	-	62%		0
	R	6	0	-	-	-	62%		10
	L	2	0	-	-	-	62%		3
	NB T	172	0	-	-	-	62%		279
	R	2	0	-	-	-	62%		3
	L	14	0	-	-	-	62%		23
SB T	290	0	-	-	-	62%		470	
R	24	0	-	-	-	62%		39	
		515	0						835
25 104th St 200th Ave Ct TMC Date: 11/08/11 2011	L	214	0	-	-	-	-50%		107
	EB T	1	0	-	-	-	23%		1
	R	37	0	-	-	-	23%		46
	L	0	0	-	-	-			0
	WB T	0	0	-	-	-			0
	R	2	0	-	-	-	23%		2
	L	25	0	-	-	-	23%		31
	NB T	65	0	-	-	-		250	315
	R	0	0	-	-	-			0
	L	7	0	-	-	-	23%		11
SB T	113	0	-	-	-		800	913	
R	275	0	-	-	-	-50%		138	
		739	0						1,564
26 South Prairie Rd 214th Ave TMC Date: 05/03/11 2011	L	36	111	144	33	30%			47
	EB T	286	126	83	-43	-34%	12%		320
	R	398	194	119	-75	-39%	12%		446
	L	3	0	0	0	-	30%		4
	WB T	294	56	44	-12	-21%	12%		329
	R	163	92	0	-92	-100%	12%		183
	L	191	82	57	-25	-30%	12%		214
	NB T	320	164	171	7	4%	12%		358
	R	4	0	0	0	-			5
	L	274	59	0	-59	-100%	12%		307
SB T	523	250	350	100	40%			732	
R	38	129	178	49	38%			52	
		2,530	1,263						2,997



Traffic Volume Calculation Worksheet
Bonney Lake Mobility Element - Comprehensive Plan
PM Peak Hour Volumes

Intersection	Movement		A	B	C	D	E	F	G	H
			EXISTING	EXISTING	2035	2035	2035	2035 Model With Planned Improvements		PROJECTED
			VOLUMES	VOLUMES	MODEL	MODEL	MODEL	% GROWTH	ADJUST	MODEL
27 214th Ave 112th Ave TMC Date: 11/08/11 2011	L		63	0	63	63	-	23%		77
	EB	T	8	167	182	15	9%	23%		10
		R	6	74	63	-11	-15%	23%		7
		L	7	5	15	10	200%			21
	WB	T	4	112	142	30	27%			5
		R	8	0	15	15	-	30%		10
		L	5	60	54	-6	-10%	23%		6
	NB	T	425	245	228	-17	-7%	12%		476
		R	3	8	41	33	413%			15
		L	14	0	0	0	-	30%		18
	SB	T	779	444	469	25	6%			823
		R	136	0	0	0	-	30%		176
			1,458	1,115						1,644
28 214th Ave 120th St TMC Date: 11/08/11 2011	L		200	117	211	94	80%		112	312
	EB	T	58	42	176	134	319%			243
		R	43	54	160	106	196%			127
		L	18	0	0	0	-	30%		23
	WB	T	44	48	105	57	119%			96
		R	44	0	0	0	-	30%		57
		L	26	38	126	88	232%			86
	NB	T	189	234	215	-19	-8%	12%		212
		R	13	0	0	0	-	30%		17
		L	70	0	0	0	-	30%		91
	SB	T	375	442	400	-42	-10%	12%		420
		R	271	120	254	134	112%		159	430
			1,351	1,095						2,114
29 Angeline Rd Veterans Memorial Dr TMC Date: 09/11/14 2014	L		91	55	176	121	220%	23%		112
	EB	T	0	-	-	-	-	-		0
		R	90	116	124	8	7%	23%		111
		L	0	-	-	-	-	-		0
	WB	T	0	-	-	-	-	-		0
		R	0	-	-	-	-	-		0
		L	94	90	121	31	34%			126
	NB	T	380	155	142	-13	-8%	12%		426
		R	0	-	-	-	-	-		0
		L	0	-	-	-	-	-		0
	SB	T	567	206	616	410	199%		604	1,171
		R	153	102	41	-61	-60%	12%		171
			1,375	724						2,117
30 Kelley Lake Rd Church Lake Rd TMC Date: 09/11/14 2014	L		0	-	-	-	-	48%		0
	EB	T	156	-	-	-	-	48%		231
		R	52	-	-	-	-	48%		77
		L	25	-	-	-	-	48%		37
	WB	T	125	-	-	-	-	48%		185
		R	0	-	-	-	-	48%		0
		L	39	-	-	-	-	48%		58
	NB	T	0	-	-	-	-	48%		0
		R	19	-	-	-	-	48%		28
		L	0	-	-	-	-	48%		0
	SB	T	0	-	-	-	-	48%		0
		R	0	-	-	-	-	48%		0
			416	0						616
31 Kelley Lake Rd Sumner-Buckley Hwy TMC Date: 09/11/14 2014	L		64	-	-	-	-	48%		95
	EB	T	426	-	-	-	-	48%		631
		R	0	-	-	-	-	48%		0
		L	0	-	-	-	-	48%		0
	WB	T	311	-	-	-	-	48%		461
		R	5	-	-	-	-	48%		7
		L	0	-	-	-	-	48%		0
	NB	T	0	-	-	-	-	48%		0
		R	0	-	-	-	-	48%		0
		L	7	-	-	-	-	48%		10
	SB	T	0	-	-	-	-	48%		0
		R	72	-	-	-	-	48%		107
			885	0						1,311

Column A: Existing Turning movement Counts from 2010, 2011 and 2014
 Column B: 2010 Model turning movement volumes
 Column C: 2035 Model with Planned Improvements turning movement volumes
 Column D: Column C - Column B
 Column E: Column D / Column B
 Column F: Manual adjustment to Column E growth percentages based on regional growth percentage
 Column G: Manual adjustment to Column D growth delta based on calibration of Existing counts to 2010 model volumes
 Column H: Column A * (Column E or Column F) + Column A OR Column A + Column G

Regional Growth Rates (25 years)			
NW Bonney Lake	30%	East Bonney Lake	30%
SW Bonney Lake	58%	NE Bonney Lake	48%
SR 410	24%	SE Bonney Lake	62%
Minimal Growth - Low Volume	23%	City Center	106%
Minimal Growth - High Volume	12%		



Level of Service Analysis Worksheets

Intersection

Int Delay, s/veh 1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	15	120	25	40	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	16	130	27	43	130

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	361	144	0
Stage 1	144	-	-
Stage 2	217	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	638	903	1422
Stage 1	883	-	-
Stage 2	819	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	617	903	1422
Mov Cap-2 Maneuver	617	-	-
Stage 1	883	-	-
Stage 2	792	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	809	1422	-
HCM Lane V/C Ratio	-	-	0.027	0.031	-
HCM Control Delay (s)	-	-	9.6	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection

Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	5	40	55	0	75	30	1	0	30	30	70
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	43	60	0	82	33	1	0	33	33	76
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.7	8.4	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	5%	71%	3%
Vol Thru, %	23%	40%	28%	91%
Vol Right, %	54%	55%	1%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	100	106	33
LT Vol	30	5	75	1
Through Vol	30	40	30	30
RT Vol	70	55	1	2
Lane Flow Rate	141	109	115	36
Geometry Grp	1	1	1	1
Degree of Util (X)	0.165	0.125	0.147	0.045
Departure Headway (Hd)	4.204	4.14	4.578	4.563
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	855	867	786	786
Service Time	2.22	2.156	2.594	2.584
HCM Lane V/C Ratio	0.165	0.126	0.146	0.046
HCM Control Delay	8.1	7.7	8.4	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.4	0.5	0.1

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	30	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	33	2
Number of Lanes	0	0	1	0

Approach SB

Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.8
HCM LOS	A

Lane

Intersection

Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	40	55	0	40	110	0	190	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	43	60	0	43	120	0	207	76
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach

	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.4	8.7	9.3
HCM LOS	A	A	A

Lane

	NBLn1	EBLn1	SBLn1
Vol Left, %	27%	42%	0%
Vol Thru, %	73%	0%	73%
Vol Right, %	0%	58%	27%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	150	95	260
LT Vol	40	40	0
Through Vol	110	0	190
RT Vol	0	55	70
Lane Flow Rate	163	103	283
Geometry Grp	1	1	1
Degree of Util (X)	0.205	0.133	0.33
Departure Headway (Hd)	4.522	4.639	4.199
Convergence, Y/N	Yes	Yes	Yes
Cap	794	772	859
Service Time	2.544	2.668	2.216
HCM Lane V/C Ratio	0.205	0.133	0.329
HCM Control Delay	8.7	8.4	9.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0.5	1.4

Intersection

Int Delay, s/veh 8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	85	20	35	115	165	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	22	38	125	179	114

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	163	0	308
Stage 1	-	-	101
Stage 2	-	-	207
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1416	-	684
Stage 1	-	-	923
Stage 2	-	-	828
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1416	-	639
Mov Cap-2 Maneuver	-	-	639
Stage 1	-	-	923
Stage 2	-	-	773

Approach	EB	WB	SB
HCM Control Delay, s	6.2	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1416	-	-	-	733
HCM Lane V/C Ratio	0.065	-	-	-	0.4
HCM Control Delay (s)	7.7	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.9

Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	45	0	20	0	340	45	30	610	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	1	1	1	1	2
Mvmt Flow	0	0	0	49	0	22	0	370	49	33	663	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1133	1146	663	1122	1122	394	663	0	0	418	0	0
Stage 1	728	728	-	394	394	-	-	-	-	-	-	-
Stage 2	405	418	-	728	728	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.209	-	-
Pot Cap-1 Maneuver	180	199	461	185	206	659	926	-	-	1146	-	-
Stage 1	415	429	-	635	605	-	-	-	-	-	-	-
Stage 2	622	591	-	418	429	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	168	190	461	178	197	659	926	-	-	1146	-	-
Mov Cap-2 Maneuver	168	190	-	178	197	-	-	-	-	-	-	-
Stage 1	415	409	-	635	605	-	-	-	-	-	-	-
Stage 2	601	591	-	399	409	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	27.4	0	0.4
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	926	-	-	-	230	1146	-	-
HCM Lane V/C Ratio	-	-	-	-	0.307	0.028	-	-
HCM Control Delay (s)	0	-	-	0	27.4	8.2	0	-
HCM Lane LOS	A	-	-	A	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	1.3	0.1	-	-

Intersection

Int Delay, s/veh 4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	30	165	120	350	600	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	1	1	2	2
Mvmt Flow	33	179	130	380	652	54




















Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1320	679	707 0
Stage 1	679	-	- -
Stage 2	641	-	- -
Critical Hdwy	6.43	6.23	4.11 -
Critical Hdwy Stg 1	5.43	-	- -
Critical Hdwy Stg 2	5.43	-	- -
Follow-up Hdwy	3.527	3.327	2.209 -
Pot Cap-1 Maneuver	172	450	896 -
Stage 1	502	-	- -
Stage 2	523	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	147	450	896 -
Mov Cap-2 Maneuver	147	-	- -
Stage 1	502	-	- -
Stage 2	447	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	21	2.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	896	-	147	450	-	-
HCM Lane V/C Ratio	0.146	-	0.222	0.399	-	-
HCM Control Delay (s)	9.7	-	36.3	18.2	-	-
HCM Lane LOS	A	-	E	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.8	1.9	-	-

HCM 2010 Signalized Intersection Summary
7: 214th Ave E & Sumner Buckley Hwy

Existing 2012
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	200	150	75	20	75	35	25	305	35	60	510	155
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	1881	1881	1900	1863	1863	1900	1900	1881	1900	1900	1863	1863
Adj Flow Rate, veh/h	217	163	82	22	82	38	27	332	38	65	554	168
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	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, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	349	304	153	246	310	144	89	979	108	133	1044	1018
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1279	1182	595	1130	1206	559	63	1522	168	130	1623	1583
Grp Volume(v), veh/h	217	0	245	22	0	120	397	0	0	619	0	168
Grp Sat Flow(s),veh/h/ln	1279	0	1776	1130	0	1764	1753	0	0	1753	0	1583
Q Serve(g_s), s	13.0	0.0	9.5	1.4	0.0	4.3	0.0	0.0	0.0	0.0	0.0	3.4
Cycle Q Clear(g_c), s	17.4	0.0	9.5	10.9	0.0	4.3	7.8	0.0	0.0	14.2	0.0	3.4
Prop In Lane	1.00		0.33	1.00		0.32	0.07		0.10	0.11		1.00
Lane Grp Cap(c), veh/h	349	0	456	246	0	453	1175	0	0	1177	0	1018
V/C Ratio(X)	0.62	0.00	0.54	0.09	0.00	0.26	0.34	0.00	0.00	0.53	0.00	0.17
Avail Cap(c_a), veh/h	404	0	533	295	0	529	1175	0	0	1177	0	1018
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	0.00	1.00	1.00	0.00	1.00	0.98	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	0.0	25.6	30.3	0.0	23.7	6.5	0.0	0.0	7.6	0.0	5.7
Incr Delay (d2), s/veh	2.3	0.0	1.0	0.2	0.0	0.3	0.8	0.0	0.0	1.7	0.0	0.3
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	4.8	0.0	4.8	0.4	0.0	2.1	4.2	0.0	0.0	7.8	0.0	1.5
LnGrp Delay(d),s/veh	32.9	0.0	26.6	30.5	0.0	24.0	7.3	0.0	0.0	9.3	0.0	6.1
LnGrp LOS	C		C	C		C	A			A		A
Approach Vol, veh/h		462			142			397			787	
Approach Delay, s/veh		29.6			25.0			7.3			8.6	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.4		24.6		55.4		24.6				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		48.0		24.0		48.0		24.0				
Max Q Clear Time (g_c+I1), s		9.8		19.4		16.2		12.9				
Green Ext Time (p_c), s		6.3		1.2		6.2		2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			15.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
8: 214th Ave E & 96th St E

Existing 2012
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (veh/h)	15	10	45	35	5	10	25	315	45	15	585	10
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	1900	1900	1900	1900	1900	1900	1881	1881	1900	1891	1891	1910
Adj Flow Rate, veh/h	16	11	49	38	5	11	27	342	49	16	636	11
Adj No. of Lanes	0	1	1	0	1	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, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	124	66	109	132	16	18	746	1340	192	880	1542	27
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.83	0.83	0.83	1.00	1.00	1.00
Sat Flow, veh/h	781	978	1615	816	241	270	788	1610	231	1004	1853	32
Grp Volume(v), veh/h	27	0	49	54	0	0	27	0	391	16	0	647
Grp Sat Flow(s),veh/h/ln	1759	0	1615	1327	0	0	788	0	1840	1004	0	1885
Q Serve(g_s), s	0.0	0.0	2.3	2.3	0.0	0.0	0.5	0.0	3.6	0.1	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	2.3	3.4	0.0	0.0	0.5	0.0	3.6	3.7	0.0	0.0
Prop In Lane	0.59		1.00	0.70		0.20	1.00		0.13	1.00		0.02
Lane Grp Cap(c), veh/h	190	0	109	166	0	0	746	0	1532	880	0	1569
V/C Ratio(X)	0.14	0.00	0.45	0.32	0.00	0.00	0.04	0.00	0.26	0.02	0.00	0.41
Avail Cap(c_a), veh/h	479	0	404	430	0	0	746	0	1532	880	0	1569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.58	0.00	0.58	0.84	0.00	0.84
Uniform Delay (d), s/veh	35.3	0.0	35.9	36.5	0.0	0.0	1.2	0.0	1.4	0.1	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	2.9	1.1	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.7
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	0.6	0.0	1.1	1.2	0.0	0.0	0.1	0.0	1.8	0.0	0.0	0.3
LnGrp Delay(d),s/veh	35.6	0.0	38.7	37.6	0.0	0.0	1.2	0.0	1.7	0.1	0.0	0.7
LnGrp LOS	D		D	D			A		A	A		A
Approach Vol, veh/h		76			54			418			663	
Approach Delay, s/veh		37.6			37.6			1.6			0.7	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.6		9.4		70.6		9.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		52.0		20.0		52.0		20.0				
Max Q Clear Time (g_c+I1), s		5.6		4.3		5.7		5.4				
Green Ext Time (p_c), s		5.5		0.4		5.5		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			5.0									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
 9: 181st Ave E/Veterans Memorial Hwy & SR 410

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	565	1970	5	5	1300	30	5	1	2	55	5	295
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	1881	1881	1900	1863	1863	1863	1900	1900	1900	1900	1863	1863
Adj Flow Rate, veh/h	614	2141	5	5	1413	33	5	1	2	60	5	321
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	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, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	872	2404	6	331	1264	565	63	16	12	144	8	882
Arrive On Green	0.49	0.66	0.66	0.37	0.71	0.71	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1792	3658	9	1774	3539	1583	302	225	176	1342	112	1583
Grp Volume(v), veh/h	614	1045	1101	5	1413	33	8	0	0	65	0	321
Grp Sat Flow(s),veh/h/ln	1792	1787	1880	1774	1770	1583	703	0	0	1453	0	1583
Q Serve(g_s), s	37.5	67.7	67.8	0.2	50.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	37.5	67.7	67.8	0.2	50.0	0.9	6.1	0.0	0.0	6.0	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	0.62		0.25	0.92		1.00
Lane Grp Cap(c), veh/h	872	1174	1235	331	1264	565	91	0	0	152	0	882
V/C Ratio(X)	0.70	0.89	0.89	0.02	1.12	0.06	0.09	0.00	0.00	0.43	0.00	0.36
Avail Cap(c_a), veh/h	872	1174	1235	331	1264	565	217	0	0	379	0	1132
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	0.80	0.80	0.80	1.00	0.00	0.00	0.43	0.00	0.43
Uniform Delay (d), s/veh	28.1	19.8	19.9	35.8	20.0	13.0	60.8	0.0	0.0	63.3	0.0	17.2
Incr Delay (d2), s/veh	2.6	10.3	9.9	0.0	62.2	0.2	0.4	0.0	0.0	0.8	0.0	0.1
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	19.0	36.5	38.2	0.1	34.5	0.4	0.3	0.0	0.0	2.5	0.0	6.9
LnGrp Delay(d),s/veh	30.7	30.1	29.8	35.8	82.2	13.1	61.2	0.0	0.0	64.1	0.0	17.3
LnGrp LOS	C	C	C	D	F	B	E			E		B
Approach Vol, veh/h		2760			1451			8			386	
Approach Delay, s/veh		30.1			80.5			61.2			25.2	
Approach LOS		C			F			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.9	30.1	96.0		13.9	72.1	54.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		24.0	4.0	92.0		32.0	46.0	50.0				
Max Q Clear Time (g_c+I1), s		8.1	2.2	69.8		8.0	39.5	52.0				
Green Ext Time (p_c), s		1.6	0.5	12.9		1.8	1.5	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			45.6									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 10: 184th Ave E & Veterans Memorial Hwy

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	435	15	35	550	40	40	60	15	20	35	95
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	1863	1863	1863	1863	1863	1900	1827	1827	1900	1900	1900	1900
Adj Flow Rate, veh/h	65	473	16	38	598	43	43	65	16	22	38	103
Adj No. of Lanes	1	1	1	1	1	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	4	4	4	0	0	0
Cap, veh/h	242	745	633	357	687	49	601	567	139	677	181	492
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	785	1863	1583	904	1717	123	1219	1417	349	1338	454	1229
Grp Volume(v), veh/h	65	473	16	38	0	641	43	0	81	22	0	141
Grp Sat Flow(s),veh/h/ln	785	1863	1583	904	0	1841	1219	0	1765	1338	0	1683
Q Serve(g_s), s	3.2	8.2	0.2	1.4	0.0	12.8	1.0	0.0	1.2	0.4	0.0	2.2
Cycle Q Clear(g_c), s	16.0	8.2	0.2	9.6	0.0	12.8	3.2	0.0	1.2	1.6	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.20	1.00		0.73
Lane Grp Cap(c), veh/h	242	745	633	357	0	736	601	0	706	677	0	673
V/C Ratio(X)	0.27	0.63	0.03	0.11	0.00	0.87	0.07	0.00	0.11	0.03	0.00	0.21
Avail Cap(c_a), veh/h	242	745	633	357	0	736	601	0	706	677	0	673
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)	0.13	0.13	0.13	0.72	0.00	0.72	0.91	0.00	0.91	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	9.7	7.3	13.5	0.0	11.0	8.9	0.0	7.5	8.0	0.0	7.9
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.1	0.0	8.3	0.2	0.0	0.3	0.1	0.0	0.7
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	0.7	4.1	0.1	0.4	0.0	8.1	0.4	0.0	0.6	0.2	0.0	1.2
LnGrp Delay(d),s/veh	18.6	9.9	7.3	13.6	0.0	19.3	9.1	0.0	7.8	8.1	0.0	8.6
LnGrp LOS	B	A	A	B		B	A		A	A		A
Approach Vol, veh/h		554			679			124			163	
Approach Delay, s/veh		10.8			19.0			8.3			8.5	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0				
Max Q Clear Time (g_c+I1), s		5.2		18.0		4.2		14.8				
Green Ext Time (p_c), s		0.9		0.0		0.9		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				14.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 11: Locust Ave E/Locust Ave & Veterans Memorial Hwy

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	160	545	25	40	310	170	15	10	30	145	15	125
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	1881	1881	1900	1844	1844	1881	1881	1881	1881	1928	1909	1909
Adj Flow Rate, veh/h	174	592	27	43	337	185	16	11	33	158	16	136
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	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, %	1	1	1	2	2	2	0	0	0	1	1	1
Cap, veh/h	384	755	34	248	420	231	137	92	140	381	31	525
Arrive On Green	0.09	0.42	0.42	0.04	0.37	0.37	0.21	0.21	0.21	0.24	0.24	0.24
Sat Flow, veh/h	1792	1785	81	1756	1120	615	106	444	672	878	130	1623
Grp Volume(v), veh/h	174	0	619	43	0	522	60	0	0	174	0	136
Grp Sat Flow(s),veh/h/ln	1792	0	1867	1756	0	1736	1222	0	0	1008	0	1623
Q Serve(g_s), s	0.0	0.0	11.4	0.7	0.0	10.7	0.1	0.0	0.0	6.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	11.4	0.7	0.0	10.7	6.2	0.0	0.0	6.1	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.35	0.27		0.55	0.91		1.00
Lane Grp Cap(c), veh/h	384	0	789	248	0	651	369	0	0	0	0	525
V/C Ratio(X)	0.45	0.00	0.78	0.17	0.00	0.80	0.16	0.00	0.00	0.00	0.00	0.26
Avail Cap(c_a), veh/h	410	0	1313	357	0	1221	664	0	0	0	0	1607
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	9.9	10.9	0.0	11.1	13.0	0.0	0.0	0.0	0.0	9.9
Incr Delay (d2), s/veh	0.8	0.0	1.8	0.3	0.0	2.4	0.2	0.0	0.0	0.0	0.0	0.3
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	8	0.0	6.1	0.3	0.0	5.5	0.6	0.0	0.0	0.0	0.0	1.1
LnGrp Delay(d),s/veh	17.2	0.0	11.7	11.3	0.0	13.5	13.2	0.0	0.0	0.0	0.0	10.2
LnGrp LOS	B		B	B		B	B					B
Approach Vol, veh/h		793			565			60			310	
Approach Delay, s/veh		12.9			13.3			13.2			4.5	
Approach LOS		B			B			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.3	5.5	20.8		13.5	7.4	18.9				
Change Period (Y+Rc), s		* 4	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		* 16	4.0	28.0		36.0	4.0	28.0				
Max Q Clear Time (g_c+I1), s		8.2	2.7	13.4		8.1	2.0	12.7				
Green Ext Time (p_c), s		0.1	0.0	3.3		1.4	0.8	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				11.5								
HCM 2010 LOS				B								
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
 12: 184th Ave E & SR 410

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	1665	225	170	1145	95	140	90	135	150	100	5
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	1872	1872	1872	1835	1835	1835	1863	1863	1863	1881	1881	1881
Adj Flow Rate, veh/h	38	1810	245	185	1245	103	125	136	0	163	109	0
Adj No. of Lanes	1	2	1	1	2	1	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	3	3	3	2	2	2	2	2	2
Cap, veh/h	151	2180	975	137	2117	947	158	166	141	188	198	168
Arrive On Green	0.17	1.00	1.00	0.08	0.61	0.61	0.09	0.09	0.00	0.11	0.11	0.00
Sat Flow, veh/h	1783	3557	1591	1748	3487	1560	1774	1863	1583	1792	1881	1599
Grp Volume(v), veh/h	38	1810	245	185	1245	103	125	136	0	163	109	0
Grp Sat Flow(s),veh/h/ln	1783	1778	1591	1748	1744	1560	1774	1863	1583	1792	1881	1599
Q Serve(g_s), s	2.6	0.0	0.0	11.0	30.5	3.9	9.7	10.0	0.0	12.5	7.7	0.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	11.0	30.5	3.9	9.7	10.0	0.0	12.5	7.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	2180	975	137	2117	947	158	166	141	188	198	168
V/C Ratio(X)	0.25	0.83	0.25	1.35	0.59	0.11	0.79	0.82	0.00	0.87	0.55	0.00
Avail Cap(c_a), veh/h	151	2180	975	137	2117	947	215	226	192	205	215	183
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)	0.64	0.64	0.64	0.62	0.62	0.62	1.00	1.00	0.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	54.3	0.0	0.0	64.5	16.8	11.6	62.5	62.7	0.0	61.7	59.5	0.0
Incr Delay (d2), s/veh	0.6	2.5	0.4	183.2	0.8	0.1	12.9	15.5	0.0	28.4	2.5	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	3	0.8	0.1	12.3	14.7	1.7	5.3	5.9	0.0	7.7	4.1	0.0
LnGrp Delay(d),s/veh	54.9	2.5	0.4	247.7	17.6	11.7	75.4	78.1	0.0	90.1	62.0	0.0
LnGrp LOS	D	A	A	F	B	B	E	E		F	E	
Approach Vol, veh/h	2093			1533			261			272		
Approach Delay, s/veh	3.2			44.9			76.8			78.8		
Approach LOS	A			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.5	15.0	89.8		18.7	15.8	89.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		17.0	11.0	80.0		16.0	6.0	85.0				
Max Q Clear Time (g_c+I1), s		12.0	13.0	2.0		14.5	4.6	32.5				
Green Ext Time (p_c), s		0.4	0.0	18.5		0.2	1.2	8.0				
Intersection Summary												
HCM 2010 Ctrl Delay	28.2											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
 13: 192nd Ave & SR 410

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	1910	160	65	1285	205	150	155	30	245	120	105
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	1844	1844	1844	1853	1853	1853	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	114	2076	174	71	1397	223	163	168	33	266	130	114
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	2	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	137	2117	947	76	2004	1020	177	242	48	270	258	219
Arrive On Green	0.08	0.60	0.60	0.09	1.00	1.00	0.10	0.16	0.16	0.08	0.14	0.14
Sat Flow, veh/h	1756	3504	1568	1765	3522	1575	1774	1513	297	3442	1863	1583
Grp Volume(v), veh/h	114	2076	174	71	1397	223	163	0	201	266	130	114
Grp Sat Flow(s),veh/h/ln	1756	1752	1568	1765	1761	1575	1774	0	1810	1721	1863	1583
Q Serve(g_s), s	9.0	80.6	6.9	5.6	0.0	0.0	12.7	0.0	14.7	10.8	9.0	9.4
Cycle Q Clear(g_c), s	9.0	80.6	6.9	5.6	0.0	0.0	12.7	0.0	14.7	10.8	9.0	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	137	2117	947	76	2004	1020	177	0	290	270	258	219
V/C Ratio(X)	0.83	0.98	0.18	0.94	0.70	0.22	0.92	0.00	0.69	0.98	0.50	0.52
Avail Cap(c_a), veh/h	201	2152	963	76	2004	1020	177	0	290	270	258	219
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)	0.35	0.35	0.35	0.70	0.70	0.70	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.6	26.9	12.3	63.8	0.0	0.0	62.4	0.0	55.6	64.4	55.8	56.0
Incr Delay (d2), s/veh	6.7	7.6	0.0	67.2	0.8	0.1	44.9	0.0	12.9	50.0	6.9	8.5
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	4.6	40.9	3.0	4.1	0.2	0.0	8.5	0.0	8.4	7.0	5.2	4.6
LnGrp Delay(d),s/veh	70.4	34.5	12.4	131.0	0.8	0.1	107.4	0.0	68.4	114.4	62.7	64.5
LnGrp LOS	E	C	B	F	A	A	F		E	F	E	E
Approach Vol, veh/h	2364			1691			364			510		
Approach Delay, s/veh	34.6			6.1			85.9			90.1		
Approach LOS	C			A			F			F		
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	15.0	26.4	10.0	88.6	18.0	23.4	14.9	83.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	21.0	6.0	86.0	14.0	18.0	16.0	76.0					
Max Q Clear Time (g_c+M), s	16.7	7.6	82.6	14.7	11.4	11.0	2.0					
Green Ext Time (p_c), s	0.0	0.9	0.0	2.0	0.0	1.3	0.1	64.0				
Intersection Summary												
HCM 2010 Ctrl Delay	34.4											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
 14: 195th Ave & SR 410

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑ ↗			↖ ↑ ↗			↖ ↗			↖ ↗		
Volume (veh/h)	10	2065	75	225	1475	5	65	1	235	15	2	10
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	1844	1844	1881	1853	1853	1890	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	2245	82	245	1603	5	71	1	255	16	2	11
Adj No. of Lanes	1	3	0	1	2	0	0	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	17	2550	93	270	2356	7	388	5	396	279	62	343
Arrive On Green	0.01	0.51	0.51	0.15	0.65	0.65	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1756	4987	181	1765	3601	11	1347	20	1583	1119	249	1371
Grp Volume(v), veh/h	11	1508	819	245	784	824	72	0	255	16	0	13
Grp Sat Flow(s),veh/h/ln	1756	1678	1812	1765	1761	1851	1368	0	1583	1119	0	1621
Q Serve(g_s), s	0.9	55.8	56.4	19.1	38.8	38.9	5.7	0.0	20.2	1.6	0.0	0.8
Cycle Q Clear(g_c), s	0.9	55.8	56.4	19.1	38.8	38.9	6.5	0.0	20.2	8.2	0.0	0.8
Prop In Lane	1.00		0.10	1.00		0.01	0.99		1.00	1.00		0.85
Lane Grp Cap(c), veh/h	17	1716	927	270	1152	1211	393	0	396	279	0	405
V/C Ratio(X)	0.63	0.88	0.88	0.91	0.68	0.68	0.18	0.00	0.64	0.06	0.00	0.03
Avail Cap(c_a), veh/h	50	1726	932	328	1182	1243	393	0	396	279	0	405
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)	0.17	0.17	0.17	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	69.0	30.4	30.5	58.3	15.1	15.1	42.1	0.0	46.9	45.1	0.0	39.7
Incr Delay (d2), s/veh	6.1	1.0	1.9	21.3	1.3	1.2	1.0	0.0	7.8	0.4	0.0	0.1
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	0.5	26.0	28.7	10.9	19.1	20.1	2.3	0.0	9.6	0.5	0.0	0.4
LnGrp Delay(d),s/veh	75.2	31.4	32.4	79.6	16.3	16.3	43.2	0.0	54.8	45.5	0.0	39.8
LnGrp LOS	E	C	C	E	B	B	D		D	D		D
Approach Vol, veh/h	2338			1853			327			29		
Approach Delay, s/veh	31.9			24.7			52.2			42.9		
Approach LOS	C			C			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		39.0	25.4	75.6		39.0	5.4	95.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		30.0	26.0	72.0		30.0	4.0	94.0				
Max Q Clear Time (g_c+I1), s		22.2	21.1	58.4		10.2	2.9	40.9				
Green Ext Time (p_c), s		0.9	0.3	13.1		1.3	0.0	47.8				
Intersection Summary												
HCM 2010 Ctrl Delay	30.5											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
 15: S Prairie Road & SR 410

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (veh/h)	55	1200	925	135	960	55	605	110	75	90	115	40
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	1844	1862	1862	1863	1863	1919	1835	1835	1872	1827	1827	1900
Adj Flow Rate, veh/h	60	1304	0	147	1043	60	658	120	0	98	125	43
Adj No. of Lanes	1	2	1	1	3	0	3	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	1	1	3	3	3	2	2	2	4	4	4
Cap, veh/h	315	1824	816	185	3200	184	720	268	0	194	145	50
Arrive On Green	0.52	0.52	0.00	0.21	1.00	1.00	0.15	0.15	0.00	0.11	0.11	0.11
Sat Flow, veh/h	504	3539	1583	1774	4921	283	4928	1835	0	1740	1301	447
Grp Volume(v), veh/h	60	1304	0	147	718	385	658	120	0	98	0	168
Grp Sat Flow(s),veh/h/ln	504	1769	1583	1774	1695	1813	1643	1835	0	1740	0	1748
Q Serve(g_s), s	8.5	36.8	0.0	10.2	0.0	0.0	17.1	7.8	0.0	6.9	0.0	12.3
Cycle Q Clear(g_c), s	8.5	36.8	0.0	10.2	0.0	0.0	17.1	7.8	0.0	6.9	0.0	12.3
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.00	1.00		0.26
Lane Grp Cap(c), veh/h	315	1824	816	185	2205	1179	720	268	0	194	0	195
V/C Ratio(X)	0.19	0.72	0.00	0.80	0.33	0.33	0.91	0.45	0.00	0.51	0.00	0.86
Avail Cap(c_a), veh/h	315	1824	816	185	2205	1179	720	268	0	214	0	215
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)	0.38	0.38	0.00	0.81	0.81	0.81	0.91	0.91	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	24.2	0.0	50.2	0.0	0.0	54.7	50.7	0.0	54.4	0.0	56.8
Incr Delay (d2), s/veh	0.5	0.9	0.0	17.5	0.3	0.6	15.0	1.1	0.0	2.0	0.0	26.8
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	1.2	18.2	0.0	5.9	0.1	0.2	8.7	4.0	0.0	3.4	0.0	7.4
LnGrp Delay(d),s/veh	17.8	25.1	0.0	67.6	0.3	0.6	69.7	51.8	0.0	56.4	0.0	83.6
LnGrp LOS	B	C		E	A	A	E	D		E		F
Approach Vol, veh/h		1364			1250			778			266	
Approach Delay, s/veh		24.8			8.3			66.9			73.6	
Approach LOS		C			A			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		23.0	17.5	71.0		18.5		88.5				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		19.0	12.0	67.0		16.0		71.0				
Max Q Clear Time (g_c+I1), s		19.1	12.2	38.8		14.3		2.0				
Green Ext Time (p_c), s		0.0	0.0	8.2		0.2		6.2				
Intersection Summary												
HCM 2010 Ctrl Delay			31.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 16: 200th Ave Ct E & S Prairie Road

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL2	NEL	NER
Lane Configurations												
Volume (veh/h)	105	660	415	50	410	40	95	70	40	270	60	60
Number	7	4	14	3	8	18	1	16	16	5	5	12
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	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	1863	1881	1881	1900	1900	1881	1881	1900	1900	1900
Adj Flow Rate, veh/h	114	717	0	54	446	43	103	43	43	339	339	65
Adj No. of Lanes	1	1	1	1	2	0	0	1	1	2	2	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	1	1	1	1	1	1	0	0	0
Cap, veh/h	146	947	805	69	1532	147	131	199	199	466	466	208
Arrive On Green	0.08	0.51	0.00	0.04	0.46	0.46	0.12	0.12	0.12	0.13	0.13	0.13
Sat Flow, veh/h	1774	1863	1583	1792	3296	317	1052	1599	1599	3619	3619	1615
Grp Volume(v), veh/h	114	717	0	54	241	248	179	43	43	339	339	65
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1792	1787	1825	1829	1599	1599	1810	1810	1615
Q Serve(g_s), s	5.0	24.6	0.0	2.4	6.7	6.7	7.6	1.9	1.9	7.2	7.2	2.9
Cycle Q Clear(g_c), s	5.0	24.6	0.0	2.4	6.7	6.7	7.6	1.9	1.9	7.2	7.2	2.9
Prop In Lane	1.00		1.00	1.00		0.17	0.58	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	146	947	805	69	830	848	228	199	199	466	466	208
V/C Ratio(X)	0.78	0.76	0.00	0.79	0.29	0.29	0.79	0.22	0.22	0.73	0.73	0.31
Avail Cap(c_a), veh/h	222	947	805	90	830	848	366	320	320	724	724	323
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)	0.67	0.67	0.00	0.46	0.46	0.46	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	15.7	0.0	38.1	13.2	13.3	34.0	31.5	31.5	33.5	33.5	31.6
Incr Delay (d2), s/veh	6.6	3.8	0.0	14.4	0.4	0.4	5.9	0.5	0.5	2.2	2.2	0.8
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	2.7	13.5	0.0	1.5	3.4	3.5	4.2	0.9	0.9	3.7	3.7	1.3
LnGrp Delay(d),s/veh	42.6	19.5	0.0	52.5	13.7	13.7	39.9	32.0	32.0	35.7	35.7	32.5
LnGrp LOS	D	B		D	B	B	D	C	C	D	D	C
Approach Vol, veh/h		831			543		222			404	404	
Approach Delay, s/veh		22.7			17.5		38.4			35.2	35.2	
Approach LOS		C			B		D			D	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		14.3	7.1	44.7		14.0	10.6	41.2
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	4.0	28.0		16.0	10.0	22.0
Max Q Clear Time (g_c+I1), s		9.2	4.4	26.6		9.6	7.0	8.7
Green Ext Time (p_c), s		1.1	0.0	0.8		0.4	0.1	4.9

Intersection Summary

HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 17: SR 410 & 208th Ave E

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑ ↗		↖	↑ ↖		↖	↖ ↗		
Volume (veh/h)	120	1355	230	90	1010	40	205	25	115	60	40	30
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	1881	1881	1900	1863	1863	1863	1900	1881	1881	1900	1881	1900
Adj Flow Rate, veh/h	130	1473	250	98	1098	43	223	27	125	65	43	33
Adj No. of Lanes	1	3	0	1	2	1	0	1	1	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, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	248	2007	340	246	1606	719	312	31	504	82	52	28
Arrive On Green	0.28	0.91	0.91	0.28	0.91	0.91	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1792	4423	749	1774	3539	1583	822	100	1599	130	165	90
Grp Volume(v), veh/h	130	1140	583	98	1098	43	250	0	125	141	0	0
Grp Sat Flow(s),veh/h/ln	1792	1712	1749	1774	1770	1583	922	0	1599	385	0	0
Q Serve(g_s), s	8.0	11.9	12.0	5.8	9.8	0.3	0.0	0.0	7.5	7.9	0.0	0.0
Cycle Q Clear(g_c), s	8.0	11.9	12.0	5.8	9.8	0.3	33.1	0.0	7.5	41.0	0.0	0.0
Prop In Lane	1.00		0.43	1.00		1.00	0.89		1.00	0.46		0.23
Lane Grp Cap(c), veh/h	248	1554	794	246	1606	719	343	0	504	162	0	0
V/C Ratio(X)	0.52	0.73	0.74	0.40	0.68	0.06	0.73	0.00	0.25	0.87	0.00	0.00
Avail Cap(c_a), veh/h	248	1554	794	246	1606	719	343	0	504	162	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	0.90	0.90	0.90	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.4	3.8	3.8	42.6	3.7	3.3	41.8	0.0	33.0	53.3	0.0	0.0
Incr Delay (d2), s/veh	1.3	2.1	4.0	0.9	2.2	0.1	7.6	0.0	0.3	36.5	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	0.0	5.2	6.1	2.9	4.8	0.2	9.1	0.0	3.4	6.7	0.0	0.0
LnGrp Delay(d),s/veh	44.7	5.9	7.9	43.5	5.9	3.4	49.4	0.0	33.3	89.8	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D		C	F		
Approach Vol, veh/h	1853			1239			375			141		
Approach Delay, s/veh	9.2			8.8			44.1			89.8		
Approach LOS	A			A			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.0	22.0	63.0		45.0	22.0	63.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		41.0	18.0	59.0		41.0	18.0	59.0				
Max Q Clear Time (g_c+I1), s		35.1	7.8	14.0		43.0	10.0	11.8				
Green Ext Time (p_c), s		1.2	0.5	10.8		0.0	0.5	6.3				
Intersection Summary												
HCM 2010 Ctrl Delay	15.9											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
 18: 211th Ave E & SR 410

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑			↔ ↑↑		↔	↔	↔	↔	↔	↔	↔
Volume (veh/h)	40	1125	115	160	800	35	160	5	155	40	5	20
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	1863	1863	1900	1863	1863	1863	1881	1881	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	1223	125	174	870	38	174	5	168	43	5	22
Adj No. of Lanes	1	3	0	1	2	1	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	1	1	1	0	0	0
Cap, veh/h	352	2963	303	200	1933	865	263	8	254	132	50	221
Arrive On Green	0.40	1.00	1.00	0.23	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1774	4689	479	1774	3539	1583	1391	46	1560	1231	308	1354
Grp Volume(v), veh/h	43	884	464	174	870	38	174	0	173	43	0	27
Grp Sat Flow(s),veh/h/ln	1774	1695	1778	1774	1770	1583	1391	0	1606	1231	0	1661
Q Serve(g_s), s	2.0	0.0	0.0	12.3	0.0	0.0	15.8	0.0	13.1	4.4	0.0	1.8
Cycle Q Clear(g_c), s	2.0	0.0	0.0	12.3	0.0	0.0	17.6	0.0	13.1	17.6	0.0	1.8
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.97	1.00		0.81
Lane Grp Cap(c), veh/h	352	2142	1124	200	1933	865	263	0	262	132	0	271
V/C Ratio(X)	0.12	0.41	0.41	0.87	0.45	0.04	0.66	0.00	0.66	0.33	0.00	0.10
Avail Cap(c_a), veh/h	352	2142	1124	355	1933	865	400	0	420	253	0	434
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	0.77	0.77	0.77	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	0.0	49.4	0.0	0.0	53.8	0.0	51.0	59.3	0.0	46.3
Incr Delay (d2), s/veh	0.1	0.5	0.9	8.6	0.6	0.1	2.8	0.0	2.8	1.4	0.0	0.2
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	0	0.1	0.3	6.5	0.2	0.0	6.3	0.0	6.0	1.6	0.0	0.8
LnGrp Delay(d),s/veh	32.1	0.5	0.9	58.0	0.6	0.1	56.6	0.0	53.9	60.7	0.0	46.5
LnGrp LOS	C	A	A	E	A	A	E		D	E		D
Approach Vol, veh/h	1391			1082				347			70	
Approach Delay, s/veh	1.6			9.8				55.3			55.2	
Approach LOS	A			A				E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.2	18.7	86.1		25.2	29.8	75.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		34.0	26.0	58.0		34.0	13.0	71.0				
Max Q Clear Time (g_c+1), s		19.6	14.3	2.0		19.6	4.0	2.0				
Green Ext Time (p_c), s		1.6	0.4	7.5		1.6	0.1	4.6				
Intersection Summary												
HCM 2010 Ctrl Delay	12.4											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
 19: 214th Ave E & SR 410

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	280	735	270	190	620	40	215	185	85	125	390	170
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	1863	1863	1863	1881	1881	1881	1881	1881	1900	1891	1891	1891
Adj Flow Rate, veh/h	304	799	293	207	674	43	234	201	92	136	424	185
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	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	1	1	1	1	1	1	1	1	1
Cap, veh/h	487	1489	666	234	990	443	295	223	102	258	455	386
Arrive On Green	0.18	0.28	0.28	0.13	0.28	0.28	0.08	0.18	0.18	0.14	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1792	3574	1599	3476	1223	560	1801	1891	1607
Grp Volume(v), veh/h	304	799	293	207	674	43	234	0	293	136	424	185
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1792	1787	1599	1738	0	1782	1801	1891	1607
Q Serve(g_s), s	20.5	24.8	19.7	14.8	21.8	2.6	8.6	0.0	20.9	9.1	28.5	7.2
Cycle Q Clear(g_c), s	20.5	24.8	19.7	14.8	21.8	2.6	8.6	0.0	20.9	9.1	28.5	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	487	1489	666	234	990	443	295	0	325	258	455	386
V/C Ratio(X)	0.62	0.54	0.44	0.88	0.68	0.10	0.79	0.00	0.90	0.53	0.93	0.48
Avail Cap(c_a), veh/h	487	1489	666	289	990	443	428	0	439	258	480	408
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)	0.90	0.90	0.90	0.82	0.82	0.82	0.88	0.00	0.88	0.93	0.93	0.93
Uniform Delay (d), s/veh	46.8	35.9	34.1	55.5	41.9	34.9	58.4	0.0	52.0	51.6	48.3	13.2
Incr Delay (d2), s/veh	2.2	1.2	1.9	19.2	3.1	0.4	5.7	0.0	15.9	1.9	23.5	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	10.4	12.4	9.0	8.6	11.2	1.2	4.4	0.0	11.8	4.7	17.9	3.3
LnGrp Delay(d),s/veh	49.1	37.2	36.0	74.7	45.0	35.3	64.0	0.0	67.9	53.5	71.8	14.0
LnGrp LOS	D	D	D	E	D	D	E		E	D	E	B
Approach Vol, veh/h		1396			924			527			745	
Approach Delay, s/veh		39.5			51.2			66.2			54.1	
Approach LOS		D			D			E			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	32.6	27.7	21.0	58.7	15.0	35.3	39.7	40.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	32.0	21.0	44.0	16.0	33.0	29.0	36.0					
Max Q Clear Time (g_c+M), s	22.9	16.8	26.8	10.6	30.5	22.5	23.8					
Green Ext Time (p_c), s	1.7	0.8	0.3	6.0	0.4	0.7	2.7	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay			49.5									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 20: 234th Ave E & SR 410

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	635	210	85	655	25	100	20	5	20	30	20
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	1863	1863	1863	1863	1863	1900	1827	1827	1900	1900	1900	1900
Adj Flow Rate, veh/h	27	690	228	92	712	27	109	22	5	22	33	22
Adj No. of Lanes	1	2	1	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	4	4	4	0	0	0
Cap, veh/h	428	1689	756	395	1660	63	205	169	39	183	108	72
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.12	0.12	0.12	0.10	0.10	0.10
Sat Flow, veh/h	717	3539	1583	606	3477	132	1740	1441	328	1810	1065	710
Grp Volume(v), veh/h	27	690	228	92	362	377	109	0	27	22	0	55
Grp Sat Flow(s),veh/h/ln	717	1770	1583	606	1770	1839	1740	0	1769	1810	0	1775
Q Serve(g_s), s	1.0	5.0	3.5	4.6	5.3	5.3	2.3	0.0	0.5	0.4	0.0	1.1
Cycle Q Clear(g_c), s	6.3	5.0	3.5	9.6	5.3	5.3	2.3	0.0	0.5	0.4	0.0	1.1
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.19	1.00		0.40
Lane Grp Cap(c), veh/h	428	1689	756	395	845	878	205	0	208	183	0	180
V/C Ratio(X)	0.06	0.41	0.30	0.23	0.43	0.43	0.53	0.00	0.13	0.12	0.00	0.31
Avail Cap(c_a), veh/h	557	2330	1042	504	1165	1211	705	0	717	733	0	719
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.9	6.7	6.3	9.8	6.8	6.8	16.4	0.0	15.6	16.1	0.0	16.5
Incr Delay (d2), s/veh	0.1	0.2	0.2	0.3	0.3	0.3	2.1	0.0	0.3	0.3	0.0	1.0
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	2.4	1.6	0.8	2.6	2.7	1.2	0.0	0.3	0.2	0.0	0.6
LnGrp Delay(d),s/veh	8.9	6.9	6.5	10.1	7.1	7.1	18.6	0.0	15.9	16.4	0.0	17.4
LnGrp LOS	A	A	A	B	A	A	B		B	B		B
Approach Vol, veh/h		945			831			136			77	
Approach Delay, s/veh		6.8			7.5			18.0			17.1	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		8.6		22.9		8.0		22.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		26.0		16.0		26.0				
Max Q Clear Time (g_c+I1), s		4.3		8.3		3.1		11.6				
Green Ext Time (p_c), s		0.3		8.1		0.2		7.3				
Intersection Summary												
HCM 2010 Ctrl Delay			8.3									
HCM 2010 LOS			A									

Intersection

Int Delay, s/veh 2.9

Movement	SBL	SBR	SEL	SET	NWT	NWR
Vol, veh/h	40	60	55	195	120	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	65	60	212	130	49

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	487	155	179 0
Stage 1	155	-	- -
Stage 2	332	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	540	891	1397 -
Stage 1	873	-	- -
Stage 2	727	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	517	891	1397 -
Mov Cap-2 Maneuver	517	-	- -
Stage 1	873	-	- -
Stage 2	696	-	- -

Approach	SB	SE	NW
HCM Control Delay, s	10.7	1.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	1397	-	517	891
HCM Lane V/C Ratio	-	-	0.043	-	0.084	0.073
HCM Control Delay (s)	-	-	7.7	-	12.6	9.4
HCM Lane LOS	-	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3	0.2

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	50	175	115	40	55	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	190	125	43	60	33

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	168	0	446
Stage 1	-	-	147
Stage 2	-	-	299
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1410	-	900
Stage 1	-	-	880
Stage 2	-	-	752
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1410	-	900
Mov Cap-2 Maneuver	-	-	545
Stage 1	-	-	880
Stage 2	-	-	720

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1410	-	-	-	545	900
HCM Lane V/C Ratio	0.039	-	-	-	0.11	0.036
HCM Control Delay (s)	7.7	0	-	-	12.4	9.2
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.1

Intersection

Int Delay, s/veh 6.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	90	220	115	110	175	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	200
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	239	125	120	190	98

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	245	0	185
Stage 1	-	-	185
Stage 2	-	-	435
Critical Hdwy	4.12	-	6.22
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	1321	-	857
Stage 1	-	-	847
Stage 2	-	-	653
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1321	-	857
Mov Cap-2 Maneuver	-	-	413
Stage 1	-	-	847
Stage 2	-	-	597

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1321	-	-	-	413	857
HCM Lane V/C Ratio	0.074	-	-	-	0.461	0.114
HCM Control Delay (s)	7.9	0	-	-	20.9	9.7
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.2	-	-	-	2.4	0.4

Intersection													
Int Delay, s/veh	0.5												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	0	2	0	0	5	2	170	2	15	290	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	2	0	0	5	2	185	2	16	315	27





















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	554	552	329	553	565	186	342	0	0	187	0	0
Stage 1	361	361	-	190	190	-	-	-	-	-	-	-
Stage 2	193	191	-	363	375	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	443	442	712	444	434	856	1217	-	-	1387	-	-
Stage 1	657	626	-	812	743	-	-	-	-	-	-	-
Stage 2	809	742	-	656	617	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	435	435	712	437	427	856	1217	-	-	1387	-	-
Mov Cap-2 Maneuver	435	435	-	437	427	-	-	-	-	-	-	-
Stage 1	656	617	-	810	742	-	-	-	-	-	-	-
Stage 2	802	741	-	645	608	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	12.5			9.2			0.1			0.3		
HCM LOS	B			A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	489	856	1387	-	-
HCM Lane V/C Ratio	0.002	-	-	0.016	0.006	0.012	-	-
HCM Control Delay (s)	8	0	-	12.5	9.2	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

HCM 2010 Signalized Intersection Summary
 25: 200th Ave Ct E & 104th St

Existing 2012
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	215	1	35	0	0	2	25	65	0	5	115	275
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	1900	1743	1743	1900	1900	1900	1759	1759	1900	1863	1863	1863
Adj Flow Rate, veh/h	283	1	46	0	0	3	33	86	0	7	151	362
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	9	9	9	0	0	0	8	8	8	2	2	2
Cap, veh/h	689	1	459	0	0	500	551	658	0	731	697	592
Arrive On Green	0.31	0.31	0.31	0.00	0.00	0.31	0.37	0.37	0.00	0.37	0.37	0.37
Sat Flow, veh/h	1309	5	1482	0	0	1615	835	1759	0	1306	1863	1583
Grp Volume(v), veh/h	284	0	46	0	0	3	33	86	0	7	151	362
Grp Sat Flow(s),veh/h/ln	1313	0	1482	0	0	1615	835	1759	0	1306	1863	1583
Q Serve(g_s), s	4.8	0.0	0.6	0.0	0.0	0.0	0.7	0.8	0.0	0.1	1.4	4.7
Cycle Q Clear(g_c), s	4.8	0.0	0.6	0.0	0.0	0.0	2.1	0.8	0.0	0.9	1.4	4.7
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	691	0	459	0	0	500	551	658	0	731	697	592
V/C Ratio(X)	0.41	0.00	0.10	0.00	0.00	0.01	0.06	0.13	0.00	0.01	0.22	0.61
Avail Cap(c_a), veh/h	1795	0	1700	0	0	1853	998	1601	0	1431	1695	1440
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	0.0	6.2	0.0	0.0	6.0	6.1	5.2	0.0	5.5	5.4	6.4
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	1.0
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	1.8	0.0	0.2	0.0	0.0	0.0	0.2	0.4	0.0	0.0	0.7	2.2
LnGrp Delay(d),s/veh	8.1	0.0	6.3	0.0	0.0	6.0	6.2	5.3	0.0	5.5	5.5	7.4
LnGrp LOS	A		A			A	A	A		A	A	A
Approach Vol, veh/h		330			3			119			520	
Approach Delay, s/veh		7.9			6.0			5.5			6.9	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.5		11.8		13.5		11.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		23.0		29.0		23.0		29.0				
Max Q Clear Time (g_c+I1), s		4.1		6.8		6.7		2.0				
Green Ext Time (p_c), s		2.9		1.8		2.8		1.9				
Intersection Summary												
HCM 2010 Ctrl Delay			7.0									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
 26: 214th Ave E & S Prairie Road

Existing 2012
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (veh/h)	35	290	405	5	300	165	195	325	5	280	535	40
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	1900	1881	1881	1900	1881	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	38	315	440	5	326	179	212	353	5	304	582	0
Adj No. of Lanes	0	1	1	0	1	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, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	83	507	516	47	368	200	407	751	11	581	818	0
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.09	0.41	0.41	0.12	0.44	0.00
Sat Flow, veh/h	103	1571	1599	5	1140	619	1792	1850	26	1792	1881	0
Grp Volume(v), veh/h	353	0	440	510	0	0	212	0	358	304	582	0
Grp Sat Flow(s),veh/h/ln	1674	0	1599	1764	0	0	1792	0	1877	1792	1881	0
Q Serve(g_s), s	0.0	0.0	20.6	3.2	0.0	0.0	5.4	0.0	11.2	7.7	20.2	0.0
Cycle Q Clear(g_c), s	13.4	0.0	20.6	22.0	0.0	0.0	5.4	0.0	11.2	7.7	20.2	0.0
Prop In Lane	0.11		1.00	0.01		0.35	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	590	0	516	615	0	0	407	0	762	581	818	0
V/C Ratio(X)	0.60	0.00	0.85	0.83	0.00	0.00	0.52	0.00	0.47	0.52	0.71	0.00
Avail Cap(c_a), veh/h	615	0	540	641	0	0	422	0	762	588	818	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)	0.46	0.00	0.46	1.00	0.00	0.00	1.00	0.00	1.00	0.58	0.58	0.00
Uniform Delay (d), s/veh	22.6	0.0	25.3	25.8	0.0	0.0	14.1	0.0	17.4	11.8	18.5	0.0
Incr Delay (d2), s/veh	0.7	0.0	6.0	8.7	0.0	0.0	1.1	0.0	2.1	0.5	3.0	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	6.7	0.0	9.9	12.1	0.0	0.0	2.7	0.0	6.2	3.8	11.2	0.0
LnGrp Delay(d),s/veh	23.3	0.0	31.3	34.4	0.0	0.0	15.2	0.0	19.5	12.2	21.5	0.0
LnGrp LOS	C		C	C			B		B	B	C	
Approach Vol, veh/h		793			510			570			886	
Approach Delay, s/veh		27.8			34.4			17.9			18.3	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.7	36.5		29.8	11.4	38.8		29.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	10.0	31.0		27.0	8.0	33.0		27.0				
Max Q Clear Time (g_c+I), s	19.5	13.2		22.6	7.4	22.2		24.0				
Green Ext Time (p_c), s	0.0	3.8		2.6	0.0	3.1		1.9				
Intersection Summary												
HCM 2010 Ctrl Delay			23.9									
HCM 2010 LOS			C									

Intersection												
Int Delay, s/veh	6.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	65	10	5	5	5	10	5	425	5	15	780	135
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	0	0	1	1	1	1	1	1
Mvmt Flow	71	11	5	5	5	11	5	462	5	16	848	147




















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1438	1432	921	1438	1503	465	995	0	0	467	0	0
Stage 1	954	954	-	476	476	-	-	-	-	-	-	-
Stage 2	484	478	-	962	1027	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.5	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	111	134	328	112	123	602	699	-	-	1100	-	-
Stage 1	311	337	-	574	560	-	-	-	-	-	-	-
Stage 2	564	556	-	310	314	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	102	128	328	100	118	602	699	-	-	1100	-	-
Mov Cap-2 Maneuver	102	128	-	100	118	-	-	-	-	-	-	-
Stage 1	308	326	-	568	554	-	-	-	-	-	-	-
Stage 2	543	550	-	285	303	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	110.5	27.2	0.1	0.1
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	699	-	-	109	184	1100	-	-
HCM Lane V/C Ratio	0.008	-	-	0.798	0.118	0.015	-	-
HCM Control Delay (s)	10.2	0	-	110.5	27.2	8.3	0	-
HCM Lane LOS	B	A	-	F	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.5	0.4	0	-	-

HCM 2010 Signalized Intersection Summary
28: 214th Ave E & 120th St E

Existing 2012
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	205	60	45	20	45	45	25	195	15	70	385	275
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	1810	1810	1900	1827	1827	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	223	65	49	22	49	49	27	212	16	76	418	299
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	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, %	5	5	5	4	4	4	2	2	2	2	2	2
Cap, veh/h	566	294	222	555	258	258	162	668	47	206	690	684
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1255	959	723	1249	839	839	74	1547	109	164	1597	1583
Grp Volume(v), veh/h	223	0	114	22	0	98	255	0	0	494	0	299
Grp Sat Flow(s),veh/h/ln	1255	0	1682	1249	0	1679	1729	0	0	1761	0	1583
Q Serve(g_s), s	4.9	0.0	1.5	0.4	0.0	1.3	0.0	0.0	0.0	1.5	0.0	4.1
Cycle Q Clear(g_c), s	6.2	0.0	1.5	2.0	0.0	1.3	2.8	0.0	0.0	6.5	0.0	4.1
Prop In Lane	1.00		0.43	1.00		0.50	0.11		0.06	0.15		1.00
Lane Grp Cap(c), veh/h	566	0	516	555	0	515	877	0	0	896	0	684
V/C Ratio(X)	0.39	0.00	0.22	0.04	0.00	0.19	0.29	0.00	0.00	0.55	0.00	0.44
Avail Cap(c_a), veh/h	919	0	989	906	0	987	1693	0	0	1772	0	1499
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	0.0	7.9	8.6	0.0	7.8	5.7	0.0	0.0	6.7	0.0	6.1
Incr Delay (d2), s/veh	0.4	0.0	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.5	0.0	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	1.7	0.0	0.7	0.1	0.0	0.6	1.5	0.0	0.0	3.3	0.0	1.8
LnGrp Delay(d),s/veh	10.5	0.0	8.1	8.6	0.0	8.0	5.9	0.0	0.0	7.3	0.0	6.5
LnGrp LOS	B		A	A		A	A			A		A
Approach Vol, veh/h		337			120			255			793	
Approach Delay, s/veh		9.7			8.1			5.9			7.0	
Approach LOS		A			A			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.2		13.4		17.2		13.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		29.0		18.0		29.0		18.0				
Max Q Clear Time (g_c+I1), s		4.8		8.2		8.5		4.0				
Green Ext Time (p_c), s		5.0		1.4		4.8		1.7				
Intersection Summary												
HCM 2010 Ctrl Delay			7.5									
HCM 2010 LOS			A									

Intersection

Int Delay, s/veh 9.2

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	565	155	95	380	90	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	2	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	595	163	100	400	95	95

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	758
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.11
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.209
Pot Cap-1 Maneuver	-	-	858
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	858
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NE
HCM Control Delay, s	0	1.9	65.3
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	232	-	-	858	-
HCM Lane V/C Ratio	0.817	-	-	0.117	-
HCM Control Delay (s)	65.3	-	-	9.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	6.2	-	-	0.4	-

Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	155	50	25	125	40	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	170	55	27	137	44	22

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	225
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.11
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.209
Pot Cap-1 Maneuver	-	-	1350
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1350
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	668	-	-	1350	-
HCM Lane V/C Ratio	0.099	-	-	0.02	-
HCM Control Delay (s)	11	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	65	425	310	5	5	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	68	447	326	5	5	74

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	332	0	913
Stage 1	-	-	329
Stage 2	-	-	584
Critical Hdwy	4.11	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.209	-	3.5
Pot Cap-1 Maneuver	1233	-	306
Stage 1	-	-	734
Stage 2	-	-	561
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1233	-	284
Mov Cap-2 Maneuver	-	-	284
Stage 1	-	-	734
Stage 2	-	-	520

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1233	-	-	-	651
HCM Lane V/C Ratio	0.055	-	-	-	0.121
HCM Control Delay (s)	8.1	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection

Int Delay, s/veh 1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	15	150	25	60	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	16	158	26	63	111

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	408	171	0
Stage 1	171	-	-
Stage 2	237	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	599	873	1391
Stage 1	859	-	-
Stage 2	802	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	570	873	1391
Mov Cap-2 Maneuver	570	-	-
Stage 1	859	-	-
Stage 2	764	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	771	1391	-
HCM Lane V/C Ratio	-	-	0.027	0.045	-
HCM Control Delay (s)	-	-	9.8	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection												
Intersection Delay, s/veh	8.9											
Intersection LOS	A											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	5	70	185	0	75	30	5	0	40	40	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	74	195	0	79	32	5	0	42	42	79
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	8.8	8.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	2%	68%	10%
Vol Thru, %	26%	27%	27%	80%
Vol Right, %	48%	71%	5%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	260	110	50
LT Vol	40	5	75	5
Through Vol	40	70	30	40
RT Vol	75	185	5	5
Lane Flow Rate	163	274	116	53
Geometry Grp	1	1	1	1
Degree of Util (X)	0.209	0.317	0.156	0.073
Departure Headway (Hd)	4.62	4.17	4.853	4.961
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	773	862	738	719
Service Time	2.666	2.202	2.894	3.014
HCM Lane V/C Ratio	0.211	0.318	0.157	0.074
HCM Control Delay	8.9	9.1	8.8	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	1.4	0.6	0.2

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	5	40	5
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	5	42	5
Number of Lanes	0	0	1	0

Approach SB

Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.4
HCM LOS	A

Lane

Intersection

Intersection Delay, s/veh10.9
 Intersection LOS B

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	20	85	0	35	155	0	365	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	21	89	0	37	163	0	384	53
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach

	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.8	9.4	12.2
HCM LOS	A	A	B

Lane

	NBLn1	EBLn1	SBLn1
Vol Left, %	18%	19%	0%
Vol Thru, %	82%	0%	88%
Vol Right, %	0%	81%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	190	105	415
LT Vol	35	20	0
Through Vol	155	0	365
RT Vol	0	85	50
Lane Flow Rate	200	111	437
Geometry Grp	1	1	1
Degree of Util (X)	0.261	0.15	0.529
Departure Headway (Hd)	4.701	4.88	4.359
Convergence, Y/N	Yes	Yes	Yes
Cap	762	732	826
Service Time	2.741	2.93	2.391
HCM Lane V/C Ratio	0.262	0.152	0.529
HCM Control Delay	9.4	8.8	12.2
HCM Lane LOS	A	A	B
HCM 95th-tile Q	1	0.5	3.2

Intersection

Int Delay, s/veh 38.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	135	35	65	120	390	155
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	142	37	68	126	411	163

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	195	0	453
Stage 1	-	-	132
Stage 2	-	-	321
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1378	-	565
Stage 1	-	-	894
Stage 2	-	-	735
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1378	-	506
Mov Cap-2 Maneuver	-	-	506
Stage 1	-	-	894
Stage 2	-	-	658

Approach	EB	WB	SB
HCM Control Delay, s	6.3	0	61.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1378	-	-	-	580
HCM Lane V/C Ratio	0.103	-	-	-	0.989
HCM Control Delay (s)	7.9	0	-	-	61.4
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	14.3

Intersection

Int Delay, s/veh 2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	55	15	500	55	30	925
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	58	16	526	58	32	974












Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1592	555	0
Stage 1	555	-	-
Stage 2	1037	-	-
Critical Hdwy	6.4	6.2	4.11
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.209
Pot Cap-1 Maneuver	119	535	996
Stage 1	579	-	-
Stage 2	345	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	111	535	996
Mov Cap-2 Maneuver	111	-	-
Stage 1	579	-	-
Stage 2	321	-	-

Approach	WB	NB	SB
HCM Control Delay, s	60.6	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	134	996	-
HCM Lane V/C Ratio	-	-	0.55	0.032	-
HCM Control Delay (s)	-	-	60.6	8.7	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	2.7	0.1	-

HCM 2010 Signalized Intersection Summary
6: 214th Ave E & Kelly Lake Rd E

Projected 2035 Baseline
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	60	305	145	515	855	100		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1845	1881	1881	1863	1900		
Adj Flow Rate, veh/h	63	321	153	542	900	105		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	3	3	1	1	2	2		
Cap, veh/h	396	353	216	1281	962	112		
Arrive On Green	0.23	0.23	0.05	0.68	0.59	0.59		
Sat Flow, veh/h	1757	1568	1792	1881	1638	191		
Grp Volume(v), veh/h	63	321	153	542	0	1005		
Grp Sat Flow(s),veh/h/ln	1757	1568	1792	1881	0	1829		
Q Serve(g_s), s	2.5	17.0	2.7	11.0	0.0	43.0		
Cycle Q Clear(g_c), s	2.5	17.0	2.7	11.0	0.0	43.0		
Prop In Lane	1.00	1.00	1.00			0.10		
Lane Grp Cap(c), veh/h	396	353	216	1281	0	1074		
V/C Ratio(X)	0.16	0.91	0.71	0.42	0.00	0.94		
Avail Cap(c_a), veh/h	412	367	216	1367	0	1157		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	26.6	32.2	20.3	6.1	0.0	16.1		
Incr Delay (d2), s/veh	0.2	25.3	10.3	0.2	0.0	13.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	16.0	2.8	5.6	0.0	25.4		
LnGrp Delay(d),s/veh	26.8	57.5	30.5	6.3	0.0	29.4		
LnGrp LOS	C	E	C	A		C		
Approach Vol, veh/h	384			695	1005			
Approach Delay, s/veh	52.5			11.6	29.4			
Approach LOS	D			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		62.1		23.2	8.0	54.1		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		62.0		20.0	4.0	54.0		
Max Q Clear Time (g_c+I1), s		13.0		19.0	4.7	45.0		
Green Ext Time (p_c), s		10.5		0.2	0.0	5.2		
Intersection Summary								
HCM 2010 Ctrl Delay			27.7					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
 7: 214th Ave E & Sumner Buckley Hwy

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	285	165	105	15	55	30	35	390	20	75	815	215
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	1881	1881	1900	1863	1863	1900	1900	1881	1900	1900	1863	1863
Adj Flow Rate, veh/h	300	174	111	16	58	32	37	411	21	79	858	226
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	388	276	176	227	290	160	55	497	23	105	839	995
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1314	1075	686	1090	1130	623	0	791	37	79	1335	1583
Grp Volume(v), veh/h	300	0	285	16	0	90	469	0	0	937	0	226
Grp Sat Flow(s),veh/h/ln	1314	0	1760	1090	0	1753	828	0	0	1414	0	1583
Q Serve(g_s), s	15.2	0.0	10.0	0.9	0.0	2.8	0.0	0.0	0.0	0.0	0.0	4.3
Cycle Q Clear(g_c), s	18.0	0.0	10.0	11.0	0.0	2.8	44.0	0.0	0.0	44.0	0.0	4.3
Prop In Lane	1.00		0.39	1.00		0.36	0.08		0.04	0.08		1.00
Lane Grp Cap(c), veh/h	388	0	453	227	0	451	576	0	0	945	0	995
V/C Ratio(X)	0.77	0.00	0.63	0.07	0.00	0.20	0.81	0.00	0.00	0.99	0.00	0.23
Avail Cap(c_a), veh/h	388	0	453	227	0	451	576	0	0	945	0	995
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	23.0	27.9	0.0	20.4	19.4	0.0	0.0	12.4	0.0	5.6
Incr Delay (d2), s/veh	9.3	0.0	2.8	0.1	0.0	0.2	8.8	0.0	0.0	27.2	0.0	0.1
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	6.8	0.0	5.2	0.3	0.0	1.4	8.6	0.0	0.0	25.1	0.0	1.9
LnGrp Delay(d),s/veh	37.1	0.0	25.8	28.0	0.0	20.6	28.2	0.0	0.0	39.6	0.0	5.7
LnGrp LOS	D		C	C		C	C			D		A
Approach Vol, veh/h		585			106			469			1163	
Approach Delay, s/veh		31.6			21.7			28.2			33.0	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.0		22.0		48.0		22.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		44.0		18.0		44.0		18.0				
Max Q Clear Time (g_c+I1), s		46.0		20.0		46.0		13.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				31.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 8: 214th Ave E & 96th St E

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (veh/h)	20	15	60	85	5	20	30	355	50	85	850	15
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	1900	1900	1900	1900	1900	1900	1881	1881	1900	1891	1891	1910
Adj Flow Rate, veh/h	21	16	63	89	5	21	32	374	53	89	895	16
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	172	111	193	196	17	28	443	1248	177	781	1433	26
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.77	0.77	0.77	0.77	0.77	0.77
Sat Flow, veh/h	808	932	1615	926	139	238	616	1612	228	971	1852	33
Grp Volume(v), veh/h	37	0	63	115	0	0	32	0	427	89	0	911
Grp Sat Flow(s),veh/h/ln1740	0	1615	1303	0	0	616	0	1841	971	0	1885	
Q Serve(g_s), s	0.0	0.0	2.7	5.3	0.0	0.0	1.8	0.0	5.1	2.2	0.0	15.9
Cycle Q Clear(g_c), s	1.3	0.0	2.7	6.6	0.0	0.0	17.7	0.0	5.1	7.3	0.0	15.9
Prop In Lane	0.57		1.00	0.77		0.18	1.00		0.12	1.00		0.02
Lane Grp Cap(c), veh/h	283	0	193	241	0	0	443	0	1425	781	0	1459
V/C Ratio(X)	0.13	0.00	0.33	0.48	0.00	0.00	0.07	0.00	0.30	0.11	0.00	0.62
Avail Cap(c_a), veh/h	432	0	345	372	0	0	443	0	1425	781	0	1459
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	0.00	1.00	1.00	0.00	0.00	0.26	0.00	0.26	0.34	0.00	0.34
Uniform Delay (d), s/veh	29.7	0.0	30.3	32.2	0.0	0.0	7.6	0.0	2.5	3.6	0.0	3.7
Incr Delay (d2), s/veh	0.2	0.0	1.0	1.5	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.7
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/ln0.7	0.0	0.0	1.2	2.4	0.0	0.0	0.3	0.0	2.5	0.6	0.0	8.1
LnGrp Delay(d),s/veh	29.9	0.0	31.2	33.7	0.0	0.0	7.7	0.0	2.6	3.7	0.0	4.4
LnGrp LOS	C		C	C			A		A	A		A
Approach Vol, veh/h		100			115			459			1000	
Approach Delay, s/veh		30.7			33.7			3.0			4.3	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.0		13.0		62.0		13.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		51.0		16.0		51.0		16.0				
Max Q Clear Time (g_c+I1), s		19.7		4.7		17.9		8.6				
Green Ext Time (p_c), s		8.9		0.6		9.0		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				7.6								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
 9: 181st Ave E/Sumner Buckley Hwy & SR 410

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1140	2185	130	65	1450	65	70	10	35	110	30	595
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	1881	1881	1900	1863	1863	1863	1900	1900	1900	1900	1863	1863
Adj Flow Rate, veh/h	1200	2300	137	68	1526	68	74	11	37	116	32	626
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	832	2548	150	89	1163	520	43	11	6	165	33	927
Arrive On Green	0.46	0.74	0.74	0.10	0.66	0.66	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1792	3430	202	1774	3539	1583	16	91	46	978	270	1583
Grp Volume(v), veh/h	1200	1187	1250	68	1526	68	122	0	0	148	0	626
Grp Sat Flow(s),veh/h/ln	1792	1787	1845	1774	1770	1583	153	0	0	1248	0	1583
Q Serve(g_s), s	65.0	71.3	75.5	5.2	46.0	2.3	0.5	0.0	0.0	0.0	0.0	17.0
Cycle Q Clear(g_c), s	65.0	71.3	75.5	5.2	46.0	2.3	17.0	0.0	0.0	16.5	0.0	17.0
Prop In Lane	1.00		0.11	1.00		1.00	0.61		0.30	0.78		1.00
Lane Grp Cap(c), veh/h	832	1328	1371	89	1163	520	60	0	0	197	0	927
V/C Ratio(X)	1.44	0.89	0.91	0.77	1.31	0.13	2.04	0.00	0.00	0.75	0.00	0.68
Avail Cap(c_a), veh/h	832	1328	1371	89	1163	520	60	0	0	197	0	927
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	0.66	0.66	0.66	1.00	0.00	0.00	0.43	0.00	0.43
Uniform Delay (d), s/veh	37.5	13.8	14.3	62.2	24.0	16.5	65.8	0.0	0.0	61.3	0.0	19.9
Incr Delay (d2), s/veh	206.0	9.6	10.7	22.9	144.7	0.3	519.7	0.0	0.0	6.7	0.0	0.8
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	19.7	38.2	41.9	3.1	45.3	1.0	11.0	0.0	0.0	6.1	0.0	16.7
LnGrp Delay(d),s/veh	243.5	23.3	25.0	85.1	168.7	16.8	585.5	0.0	0.0	68.0	0.0	20.7
LnGrp LOS	F	C	C	F	F	B	F			E		C
Approach Vol, veh/h		3637			1662			122			774	
Approach Delay, s/veh		96.6			159.1			585.5			29.8	
Approach LOS		F			F			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.0	11.0	108.0		21.0	69.0	50.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		17.0	7.0	104.0		17.0	65.0	46.0				
Max Q Clear Time (g_c+I1), s		19.0	7.2	77.5		19.0	67.0	48.0				
Green Ext Time (p_c), s		0.0	0.0	17.9		0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			114.6									
HCM 2010 LOS			F									

HCM 2010 Signalized Intersection Summary
 10: 184th Ave E & Sumner Buckley Hwy

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	770	30	50	845	80	85	130	30	45	70	195
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	1863	1863	1863	1863	1863	1900	1827	1827	1900	1900	1900	1900
Adj Flow Rate, veh/h	126	811	32	53	889	84	89	137	32	47	74	205
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	0	0	0
Cap, veh/h	234	1175	999	336	1057	100	214	353	82	316	110	304
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	576	1863	1583	650	1676	158	1075	1433	335	1236	446	1236
Grp Volume(v), veh/h	126	811	32	53	0	973	89	0	169	47	0	279
Grp Sat Flow(s),veh/h/ln	576	1863	1583	650	0	1835	1075	0	1768	1236	0	1682
Q Serve(g_s), s	13.9	18.5	0.5	3.8	0.0	27.1	5.3	0.0	5.2	2.1	0.0	9.7
Cycle Q Clear(g_c), s	41.0	18.5	0.5	22.3	0.0	27.1	15.0	0.0	5.2	7.3	0.0	9.7
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.19	1.00		0.73
Lane Grp Cap(c), veh/h	234	1175	999	336	0	1157	214	0	435	316	0	414
V/C Ratio(X)	0.54	0.69	0.03	0.16	0.00	0.84	0.42	0.00	0.39	0.15	0.00	0.67
Avail Cap(c_a), veh/h	234	1175	999	336	0	1157	214	0	435	316	0	414
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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	7.8	4.5	15.1	0.0	9.4	28.9	0.0	20.4	23.5	0.0	22.1
Incr Delay (d2), s/veh	2.5	1.7	0.0	0.2	0.0	5.7	5.8	0.0	2.6	1.0	0.0	8.5
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	2.4	9.8	0.2	0.7	0.0	15.1	1.9	0.0	2.8	0.8	0.0	5.5
LnGrp Delay(d),s/veh	28.2	9.6	4.5	15.3	0.0	15.1	34.8	0.0	23.0	24.5	0.0	30.6
LnGrp LOS	C	A	A	B		B	C		C	C		C
Approach Vol, veh/h		969			1026			258			326	
Approach Delay, s/veh		11.8			15.1			27.1			29.7	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		45.0		20.0		45.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		41.0		16.0		41.0				
Max Q Clear Time (g_c+I1), s		17.0		43.0		11.7		29.1				
Green Ext Time (p_c), s		0.0		0.0		1.1		8.5				
Intersection Summary												
HCM 2010 Ctrl Delay				16.9								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 11: Locust Ave E/Locust Ave & Sumner Buckley Hwy

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	225	805	30	50	470	195	20	15	40	235	20	230
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	1881	1881	1900	1844	1844	1881	1881	1881	1881	1928	1909	1909
Adj Flow Rate, veh/h	237	847	32	53	495	205	21	16	42	247	21	242
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	1	1	1
Cap, veh/h	362	945	36	238	582	241	95	82	123	269	19	569
Arrive On Green	0.09	0.52	0.52	0.04	0.47	0.47	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1792	1801	68	1756	1240	514	102	318	477	643	74	1623
Grp Volume(v), veh/h	237	0	879	53	0	700	79	0	0	268	0	242
Grp Sat Flow(s),veh/h/ln	1792	0	1869	1756	0	1753	897	0	0	716	0	1623
Q Serve(g_s), s	4.2	0.0	28.2	1.0	0.0	23.5	0.4	0.0	0.0	12.7	0.0	7.6
Cycle Q Clear(g_c), s	4.2	0.0	28.2	1.0	0.0	23.5	13.2	0.0	0.0	12.7	0.0	7.6
Prop In Lane	1.00		0.04	1.00		0.29	0.27		0.53	0.92		1.00
Lane Grp Cap(c), veh/h	362	0	981	238	0	823	300	0	0	0	0	569
V/C Ratio(X)	0.65	0.00	0.90	0.22	0.00	0.85	0.26	0.00	0.00	0.00	0.00	0.43
Avail Cap(c_a), veh/h	384	0	1064	277	0	919	300	0	0	0	0	1026
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	14.2	13.3	0.0	15.6	19.7	0.0	0.0	0.0	0.0	16.5
Incr Delay (d2), s/veh	3.7	0.0	9.5	0.5	0.0	7.0	0.5	0.0	0.0	0.0	0.0	0.5
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	2.5	0.0	17.0	0.5	0.0	12.9	1.2	0.0	0.0	0.0	0.0	3.5
LnGrp Delay(d),s/veh	17.0	0.0	23.8	13.7	0.0	22.7	20.2	0.0	0.0	0.0	0.0	17.0
LnGrp LOS	B		C	B		C	C					B
Approach Vol, veh/h	1116						753		79		510	
Approach Delay, s/veh	22.3						22.0		20.2		8.1	
Approach LOS	C						C		C		A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	21.2		6.5	39.0	21.2		10.2	35.3				
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0		4.0	4.0				
Max Green Setting (Gmax), s	16.0		4.0	38.0	36.0		7.0	35.0				
Max Q Clear Time (g_c+I1), s	15.2		3.0	30.2	14.7		6.2	25.5				
Green Ext Time (p_c), s	0.3		0.0	4.9	2.5		0.1	5.6				
Intersection Summary												
HCM 2010 Ctrl Delay			19.2									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 12: 184th Ave E & SR 410

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	65	1935	350	180	1410	125	215	160	220	260	125	5
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	1872	1872	1872	1835	1835	1835	1863	1863	1863	1881	1881	1881
Adj Flow Rate, veh/h	68	2037	368	189	1484	132	226	168	0	274	132	0
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	2	2	2
Cap, veh/h	222	1905	852	255	1943	869	372	201	171	333	180	153
Arrive On Green	0.17	0.71	0.71	0.15	0.56	0.56	0.11	0.11	0.00	0.10	0.10	0.00
Sat Flow, veh/h	1783	3557	1591	1748	3487	1560	3442	1863	1583	3476	1881	1599
Grp Volume(v), veh/h	68	2037	368	189	1484	132	226	168	0	274	132	0
Grp Sat Flow(s),veh/h/ln	1783	1778	1591	1748	1744	1560	1721	1863	1583	1738	1881	1599
Q Serve(g_s), s	4.7	75.0	13.4	14.5	45.9	5.7	8.8	12.4	0.0	10.8	9.6	0.0
Cycle Q Clear(g_c), s	4.7	75.0	13.4	14.5	45.9	5.7	8.8	12.4	0.0	10.8	9.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	1905	852	255	1943	869	372	201	171	333	180	153
V/C Ratio(X)	0.31	1.07	0.43	0.74	0.76	0.15	0.61	0.83	0.00	0.82	0.73	0.00
Avail Cap(c_a), veh/h	222	1905	852	255	1943	869	467	253	215	397	215	183
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.26	0.26	0.26	0.22	0.22	0.22	1.00	1.00	0.00	0.85	0.85	0.00
Uniform Delay (d), s/veh	53.1	20.1	11.3	57.2	23.9	15.0	59.6	61.2	0.0	62.1	61.5	0.0
Incr Delay (d2), s/veh	0.2	34.5	0.4	2.6	0.7	0.1	1.6	17.3	0.0	9.7	8.5	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	2.3	45.1	5.8	7.2	22.2	2.5	4.3	7.4	0.0	5.7	5.4	0.0
LnGrp Delay(d),s/veh	53.3	54.6	11.7	59.8	24.6	15.1	61.2	78.5	0.0	71.8	70.1	0.0
LnGrp LOS	D	F	B	E	C	B	E	E		E	E	
Approach Vol, veh/h		2473			1805			394			406	
Approach Delay, s/veh		48.2			27.6			68.6			71.3	
Approach LOS		D			C			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.1	24.5	79.0		17.4	21.5	82.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		19.0	14.0	75.0		16.0	11.0	78.0				
Max Q Clear Time (g_c+I1), s		14.4	16.5	77.0		12.8	6.7	47.9				
Green Ext Time (p_c), s		0.8	0.0	0.0		0.6	0.4	9.9				
Intersection Summary												
HCM 2010 Ctrl Delay			44.3									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 13: 192nd Ave & SR 410

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	155	2365	240	100	1595	245	245	255	50	360	180	155
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	1844	1844	1844	1853	1853	1853	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	163	2489	253	105	1679	258	258	268	53	379	189	163
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	2027	907	76	1816	948	215	270	53	295	266	226
Arrive On Green	0.11	0.58	0.58	0.09	1.00	1.00	0.12	0.18	0.18	0.09	0.14	0.14
Sat Flow, veh/h	1756	3504	1568	1765	3522	1575	1774	1511	299	3442	1863	1583
Grp Volume(v), veh/h	163	2489	253	105	1679	258	258	0	321	379	189	163
Grp Sat Flow(s),veh/h/ln	1756	1752	1568	1765	1761	1575	1774	0	1810	1721	1863	1583
Q Serve(g_s), s	12.8	81.0	6.5	6.0	0.0	0.0	17.0	0.0	24.8	12.0	13.6	13.8
Cycle Q Clear(g_c), s	12.8	81.0	6.5	6.0	0.0	0.0	17.0	0.0	24.8	12.0	13.6	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	186	2027	907	76	1816	948	215	0	323	295	266	226
V/C Ratio(X)	0.88	1.23	0.28	1.39	0.92	0.27	1.20	0.00	0.99	1.28	0.71	0.72
Avail Cap(c_a), veh/h	188	2027	907	76	1816	948	215	0	323	295	266	226
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)	0.09	0.09	0.09	0.84	0.84	0.84	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	29.5	4.9	64.0	0.0	0.0	61.5	0.0	57.4	64.0	57.2	57.3
Incr Delay (d2), s/veh	4.6	102.9	0.0	229.1	7.4	0.1	125.0	0.0	48.4	151.4	14.9	18.0
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	6.5	67.8	2.8	7.7	1.9	0.0	15.8	0.0	16.7	11.9	8.1	7.2
LnGrp Delay(d),s/veh	66.3	132.4	4.9	293.1	7.4	0.1	186.5	0.0	105.8	215.4	72.1	75.3
LnGrp LOS	E	F	A	F	A	A	F		F	F	E	E
Approach Vol, veh/h		2905			2042			579			731	
Approach Delay, s/veh		117.6			21.2			141.7			147.1	
Approach LOS		F			C			F			F	
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	6.0	29.0	10.0	85.0	21.0	24.0	18.8	76.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	25.0	6.0	81.0	17.0	20.0	15.0	72.0				
Max Q Clear Time (g_c+M), s	11.0	26.8	8.0	83.0	19.0	15.8	14.8	2.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.3	0.0	24.3				
Intersection Summary												
HCM 2010 Ctrl Delay			91.8									
HCM 2010 LOS			F									

HCM 2010 Signalized Intersection Summary
 14: 195th Ave & SR 410

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑ ↘			↔ ↑↑↑ ↘			↔ ↑ ↘			↔ ↘ ↘		
Volume (veh/h)	10	2460	105	325	1755	10	90	5	335	20	5	10
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	1844	1844	1881	1853	1853	1890	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	2589	111	342	1847	11	95	5	353	21	5	11
Adj No. of Lanes	1	3	0	1	3	0	0	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	525	2547	108	328	2083	12	327	16	339	201	111	245
Arrive On Green	0.30	0.51	0.51	0.37	0.80	0.80	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1756	4953	210	1765	5190	31	1291	74	1583	1019	519	1142
Grp Volume(v), veh/h	11	1746	954	342	1200	658	100	0	353	21	0	16
Grp Sat Flow(s),veh/h/ln	1756	1678	1807	1765	1687	1848	1366	0	1583	1019	0	1661
Q Serve(g_s), s	0.6	72.0	72.0	26.0	34.1	34.1	8.3	0.0	30.0	2.5	0.0	1.1
Cycle Q Clear(g_c), s	0.6	72.0	72.0	26.0	34.1	34.1	9.4	0.0	30.0	11.9	0.0	1.1
Prop In Lane	1.00		0.12	1.00		0.02	0.95		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	525	1726	929	328	1354	742	343	0	339	201	0	356
V/C Ratio(X)	0.02	1.01	1.03	1.04	0.89	0.89	0.29	0.00	1.04	0.10	0.00	0.04
Avail Cap(c_a), veh/h	525	1726	929	328	2265	1241	343	0	339	201	0	356
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)	0.09	0.09	0.09	0.71	0.71	0.71	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.6	34.0	34.0	44.0	11.6	11.6	47.3	0.0	55.0	52.0	0.0	43.6
Incr Delay (d2), s/veh	0.0	9.6	16.7	53.6	1.9	3.3	2.1	0.0	59.8	1.0	0.0	0.2
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	0.3	35.4	39.9	17.4	15.3	17.1	3.5	0.0	18.7	0.8	0.0	0.5
LnGrp Delay(d),s/veh	34.6	43.6	50.7	97.6	13.5	15.0	49.4	0.0	114.8	53.0	0.0	43.9
LnGrp LOS	C	F	F	F	B	B	D		F	D		D
Approach Vol, veh/h	2711			2200			453			37		
Approach Delay, s/veh	46.1			27.0			100.3			49.1		
Approach LOS	D			C			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.0	30.0	76.0		34.0	45.8	60.2				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		30.0	26.0	72.0		30.0	4.0	94.0				
Max Q Clear Time (g_c+I1), s		32.0	28.0	74.0		13.9	2.6	36.1				
Green Ext Time (p_c), s		0.0	0.0	0.0		1.8	0.2	20.1				
Intersection Summary												
HCM 2010 Ctrl Delay	42.9											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
 15: S Prairie Road & SR 410

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (veh/h)	80	1535	1085	180	1400	80	665	190	90	130	275	55
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	1844	1862	1862	1863	1863	1919	1835	1835	1872	1827	1827	1900
Adj Flow Rate, veh/h	84	1616	0	189	1474	84	700	200	0	137	289	58
Adj No. of Lanes	1	2	1	1	3	0	3	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	1	3	3	3	2	2	2	4	4	4
Cap, veh/h	201	1845	825	127	3060	174	704	262	0	261	222	44
Arrive On Green	1.00	1.00	0.00	0.07	0.62	0.62	0.05	0.05	0.00	0.15	0.15	0.15
Sat Flow, veh/h	326	3539	1583	1774	4924	281	4928	1835	0	1740	1478	297
Grp Volume(v), veh/h	84	1616	0	189	1015	543	700	200	0	137	0	347
Grp Sat Flow(s),veh/h/ln	326	1769	1583	1774	1695	1814	1643	1835	0	1740	0	1775
Q Serve(g_s), s	8.4	0.0	0.0	10.0	22.6	22.6	19.9	15.1	0.0	10.2	0.0	21.0
Cycle Q Clear(g_c), s	17.1	0.0	0.0	10.0	22.6	22.6	19.9	15.1	0.0	10.2	0.0	21.0
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.00	1.00		0.17
Lane Grp Cap(c), veh/h	201	1845	825	127	2107	1127	704	262	0	261	0	266
V/C Ratio(X)	0.42	0.88	0.00	1.49	0.48	0.48	0.99	0.76	0.00	0.52	0.00	1.30
Avail Cap(c_a), veh/h	201	1845	825	127	2107	1127	704	262	0	261	0	266
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.67	0.67	0.67	0.84	0.84	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	1.0	0.0	0.0	65.0	14.3	14.3	66.6	64.4	0.0	54.9	0.0	59.5
Incr Delay (d2), s/veh	0.6	0.6	0.0	247.0	0.5	1.0	29.7	10.6	0.0	1.9	0.0	161.2
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	0.7	0.2	0.0	13.6	10.7	11.6	11.0	8.5	0.0	5.0	0.0	22.2
LnGrp Delay(d),s/veh	1.6	0.6	0.0	312.0	14.9	15.3	96.3	75.0	0.0	56.8	0.0	220.7
LnGrp LOS	A	A		F	B	B	F	E		E		F
Approach Vol, veh/h		1700			1747			900			484	
Approach Delay, s/veh		0.7			47.1			91.6			174.3	
Approach LOS		A			D			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		24.0	14.0	77.0		25.0		91.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		20.0	10.0	73.0		21.0		87.0				
Max Q Clear Time (g_c+I1), s		21.9	12.0	19.1		23.0		24.6				
Green Ext Time (p_c), s		0.0	0.0	34.5		0.0		37.6				
Intersection Summary												
HCM 2010 Ctrl Delay			51.8									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 16: 200th Ave Ct E & S Prairie Road

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	170	725	930	60	450	60	325	95	70	150	110	65
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	1863	1863	1863	1881	1881	1900	1900	1900	1900	1900	1881	1881
Adj Flow Rate, veh/h	179	763	0	63	474	63	221	269	74	158	116	68
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	0	0	0	1	1	1
Cap, veh/h	291	1104	939	64	1474	195	220	231	196	143	105	217
Arrive On Green	0.16	0.59	0.00	0.04	0.46	0.46	0.12	0.12	0.12	0.14	0.14	0.14
Sat Flow, veh/h	1774	1863	1583	1792	3174	420	1810	1900	1615	1054	774	1599
Grp Volume(v), veh/h	179	763	0	63	266	271	221	269	74	274	0	68
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1792	1787	1807	1810	1900	1615	1828	0	1599
Q Serve(g_s), s	13.1	39.5	0.0	4.9	13.1	13.2	17.0	17.0	5.9	19.0	0.0	5.4
Cycle Q Clear(g_c), s	13.1	39.5	0.0	4.9	13.1	13.2	17.0	17.0	5.9	19.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	0.58		1.00
Lane Grp Cap(c), veh/h	291	1104	939	64	830	839	220	231	196	248	0	217
V/C Ratio(X)	0.61	0.69	0.00	0.98	0.32	0.32	1.01	1.17	0.38	1.10	0.00	0.31
Avail Cap(c_a), veh/h	291	1104	939	64	830	839	220	231	196	248	0	217
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)	0.09	0.09	0.00	0.17	0.17	0.17	0.98	0.98	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.4	19.7	0.0	67.5	23.6	23.6	61.5	61.5	56.6	60.5	0.0	54.6
Incr Delay (d2), s/veh	0.3	0.3	0.0	42.7	0.2	0.2	61.6	110.8	1.2	87.9	0.0	0.8
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	16.5	20.2	0.0	3.2	6.5	6.7	12.2	16.0	2.7	15.6	0.0	2.4
LnGrp Delay(d),s/veh	54.7	20.0	0.0	110.2	23.8	23.8	123.1	172.3	57.8	148.4	0.0	55.4
LnGrp LOS	D	B		F	C	C	F	F	E	F		E
Approach Vol, veh/h		942			600			564			342	
Approach Delay, s/veh		26.6			32.9			138.0			129.9	
Approach LOS		C			C			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.0	9.0	87.0		23.0	27.0	69.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		17.0	5.0	83.0		19.0	23.0	65.0				
Max Q Clear Time (g_c+1), s		19.0	6.9	41.5		21.0	15.1	15.2				
Green Ext Time (p_c), s		0.0	0.0	4.3		0.0	0.6	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay			68.2									
HCM 2010 LOS			E									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
 17: SR 410 & 208th Ave E

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑ ↗			↖ ↗			↖ ↗		
Volume (veh/h)	130	1645	250	130	1225	60	225	35	125	90	55	45
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	1881	1881	1900	1863	1863	1863	1900	1881	1881	1900	1881	1900
Adj Flow Rate, veh/h	137	1732	263	137	1289	63	237	37	132	95	58	47
Adj No. of Lanes	1	3	0	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	163	2060	311	215	1726	772	327	44	537	87	52	31
Arrive On Green	0.03	0.15	0.15	0.24	0.98	0.98	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1792	4505	680	1774	3539	1583	832	130	1599	146	154	92
Grp Volume(v), veh/h	137	1313	682	137	1289	63	274	0	132	200	0	0
Grp Sat Flow(s),veh/h/ln	1792	1712	1761	1774	1770	1583	962	0	1599	392	0	0
Q Serve(g_s), s	10.7	52.2	52.7	9.7	4.7	0.2	0.0	0.0	8.4	10.0	0.0	0.0
Cycle Q Clear(g_c), s	10.7	52.2	52.7	9.7	4.7	0.2	37.0	0.0	8.4	47.0	0.0	0.0
Prop In Lane	1.00		0.39	1.00		1.00	0.86		1.00	0.47		0.23
Lane Grp Cap(c), veh/h	163	1565	805	215	1726	772	371	0	537	170	0	0
V/C Ratio(X)	0.84	0.84	0.85	0.64	0.75	0.08	0.74	0.00	0.25	1.18	0.00	0.00
Avail Cap(c_a), veh/h	218	1565	805	215	1726	772	371	0	537	170	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.41	0.41	0.41	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	66.9	54.4	54.7	50.2	0.9	0.9	43.2	0.0	33.7	59.3	0.0	0.0
Incr Delay (d2), s/veh	9.0	2.4	4.8	4.9	2.4	0.2	7.6	0.0	0.2	125.4	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	5.7	25.3	26.8	5.0	1.6	0.1	10.6	0.0	3.7	12.5	0.0	0.0
LnGrp Delay(d),s/veh	75.9	56.8	59.4	55.1	3.4	1.1	50.8	0.0	33.9	184.7	0.0	0.0
LnGrp LOS	E	E	E	E	A	A	D		C	F		
Approach Vol, veh/h	2132			1489			406			200		
Approach Delay, s/veh	58.9			8.0			45.3			184.7		
Approach LOS	E			A			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		51.0	21.0	68.0		51.0	16.7	72.3				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		47.0	17.0	64.0		47.0	17.0	64.0				
Max Q Clear Time (g_c+I1), s		39.0	11.7	54.7		49.0	12.7	6.7				
Green Ext Time (p_c), s		1.8	1.3	6.2		0.0	0.1	9.1				
Intersection Summary												
HCM 2010 Ctrl Delay	45.6											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
 18: 211th Ave E & SR 410

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑ ↗			↖ ↗			↖ ↗		
Volume (veh/h)	55	1365	170	235	975	55	235	10	230	60	10	30
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	1863	1863	1900	1863	1863	1863	1881	1881	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	1437	179	247	1026	58	247	11	242	63	11	32
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	0	0	0
Cap, veh/h	73	2021	252	285	1983	887	386	16	349	198	98	284
Arrive On Green	0.05	0.59	0.59	0.32	1.00	1.00	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1774	4582	570	1774	3539	1583	1371	70	1540	1144	430	1250
Grp Volume(v), veh/h	58	1063	553	247	1026	58	247	0	253	63	0	43
Grp Sat Flow(s),veh/h/ln	1774	1695	1762	1774	1770	1583	1371	0	1610	1144	0	1679
Q Serve(g_s), s	2.3	15.6	15.6	9.2	0.0	0.0	12.2	0.0	10.1	3.7	0.0	1.4
Cycle Q Clear(g_c), s	2.3	15.6	15.6	9.2	0.0	0.0	13.6	0.0	10.1	13.8	0.0	1.4
Prop In Lane	1.00		0.32	1.00		1.00	1.00		0.96	1.00		0.74
Lane Grp Cap(c), veh/h	73	1495	777	285	1983	887	386	0	365	198	0	381
V/C Ratio(X)	0.79	0.71	0.71	0.87	0.52	0.07	0.64	0.00	0.69	0.32	0.00	0.11
Avail Cap(c_a), veh/h	152	1495	777	329	1983	887	388	0	368	199	0	384
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	0.60	0.33	0.33	0.33	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.8	11.3	11.3	23.1	0.0	0.0	26.9	0.0	24.8	31.2	0.0	21.5
Incr Delay (d2), s/veh	10.8	1.8	3.3	7.3	0.3	0.0	3.5	0.0	5.4	0.9	0.0	0.1
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	1.3	7.6	8.2	5.0	0.1	0.0	5.0	0.0	5.1	1.2	0.0	0.7
LnGrp Delay(d),s/veh	43.6	13.1	14.7	30.3	0.3	0.0	30.3	0.0	30.3	32.1	0.0	21.6
LnGrp LOS	D	B	B	C	A	A	C		C	C		C
Approach Vol, veh/h	1674			1331			500			106		
Approach Delay, s/veh	14.6			5.9			30.3			27.8		
Approach LOS	B			A			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.9	15.2	34.9		19.9	6.9	43.2				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		16.0	13.0	29.0		16.0	6.0	36.0				
Max Q Clear Time (g_c+I1), s		15.6	11.2	17.6		15.8	4.3	2.0				
Green Ext Time (p_c), s		0.1	0.2	8.8		0.1	0.0	18.5				
Intersection Summary												
HCM 2010 Ctrl Delay	14.0											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
 19: 214th Ave E & SR 410

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	300	1055	345	280	1075	85	275	235	210	210	540	205
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	1863	1863	1863	1881	1881	1881	1881	1881	1900	1891	1891	1891
Adj Flow Rate, veh/h	316	1111	363	295	1132	89	289	247	221	221	568	216
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	304	1138	509	294	1123	503	342	249	223	232	570	485
Arrive On Green	0.34	0.64	0.64	0.16	0.31	0.31	0.10	0.27	0.27	0.13	0.30	0.30
Sat Flow, veh/h	1774	3539	1583	1792	3574	1599	3476	916	820	1801	1891	1607
Grp Volume(v), veh/h	316	1111	363	295	1132	89	289	0	468	221	568	216
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1792	1787	1599	1738	0	1736	1801	1891	1607
Q Serve(g_s), s	24.0	42.2	16.3	23.0	44.0	5.7	11.4	0.0	37.6	17.1	42.0	15.2
Cycle Q Clear(g_c), s	24.0	42.2	16.3	23.0	44.0	5.7	11.4	0.0	37.6	17.1	42.0	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	304	1138	509	294	1123	503	342	0	471	232	570	485
V/C Ratio(X)	1.04	0.98	0.71	1.00	1.01	0.18	0.85	0.00	0.99	0.95	1.00	0.45
Avail Cap(c_a), veh/h	304	1138	509	294	1123	503	397	0	471	232	570	485
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)	0.61	0.61	0.61	0.77	0.77	0.77	0.78	0.00	0.78	0.77	0.77	0.77
Uniform Delay (d), s/veh	46.0	24.5	12.3	58.5	48.0	34.9	62.1	0.0	50.9	60.6	48.8	39.4
Incr Delay (d2), s/veh	50.8	16.0	5.2	46.7	25.5	0.6	11.1	0.0	34.6	39.8	32.0	0.5
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	15.9	22.6	7.6	15.2	25.7	2.6	6.0	0.0	22.6	11.0	27.0	6.8
LnGrp Delay(d),s/veh	96.8	40.5	17.5	105.2	73.5	35.4	73.1	0.0	85.5	100.4	80.8	39.9
LnGrp LOS	F	D	B	F	F	D	E		F	F	F	D
Approach Vol, veh/h		1790			1516			757			1005	
Approach Delay, s/veh		45.8			77.4			80.8			76.3	
Approach LOS		D			E			F			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	32.0	42.0	27.0	49.0	17.8	46.2	28.0	48.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	38.0	23.0	45.0	16.0	40.0	24.0	44.0				
Max Q Clear Time (g_c+1.5p_c), s	19.5	39.6	25.0	44.2	13.4	44.0	26.0	46.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.3	0.0	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	66.5
HCM 2010 LOS	E

HCM 2010 Signalized Intersection Summary
 20: 234th Ave E & SR 410

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	860	405	110	850	60	100	25	10	60	70	55
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	1863	1863	1863	1863	1863	1900	1827	1827	1900	1900	1900	1900
Adj Flow Rate, veh/h	37	905	426	116	895	63	105	26	11	63	74	58
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	0	0	0
Cap, veh/h	364	1958	876	300	1855	131	177	124	52	214	117	92
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.10	0.10	0.10	0.12	0.12	0.12
Sat Flow, veh/h	584	3539	1583	410	3355	236	1740	1220	516	1810	989	775
Grp Volume(v), veh/h	37	905	426	116	472	486	105	0	37	63	0	132
Grp Sat Flow(s),veh/h/ln	584	1770	1583	410	1770	1821	1740	0	1736	1810	0	1763
Q Serve(g_s), s	2.2	8.1	8.7	12.5	8.6	8.6	3.1	0.0	1.0	1.7	0.0	3.8
Cycle Q Clear(g_c), s	10.8	8.1	8.7	20.7	8.6	8.6	3.1	0.0	1.0	1.7	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.30	1.00		0.44
Lane Grp Cap(c), veh/h	364	1958	876	300	979	1007	177	0	176	214	0	209
V/C Ratio(X)	0.10	0.46	0.49	0.39	0.48	0.48	0.59	0.00	0.21	0.29	0.00	0.63
Avail Cap(c_a), veh/h	383	2075	928	313	1037	1067	526	0	525	547	0	533
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	7.1	7.2	13.3	7.2	7.2	22.7	0.0	21.8	21.3	0.0	22.2
Incr Delay (d2), s/veh	0.1	0.2	0.4	0.8	0.4	0.4	3.2	0.0	0.6	0.8	0.0	3.1
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	0.4	3.9	3.9	1.5	4.2	4.3	1.6	0.0	0.5	0.9	0.0	2.0
LnGrp Delay(d),s/veh	10.6	7.3	7.6	14.1	7.6	7.6	25.9	0.0	22.4	22.0	0.0	25.4
LnGrp LOS	B	A	A	B	A	A	C		C	C		C
Approach Vol, veh/h		1368			1074			142			195	
Approach Delay, s/veh		7.5			8.3			25.0			24.3	
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		9.4		33.3		10.3		33.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		31.0		16.0		31.0				
Max Q Clear Time (g_c+I1), s		5.1		12.8		5.8		22.7				
Green Ext Time (p_c), s		0.3		12.2		0.5		6.6				
Intersection Summary												
HCM 2010 Ctrl Delay				9.9								
HCM 2010 LOS				A								

Intersection

Int Delay, s/veh 2.7

Movement	SBL	SBR	SEL	SET	NWT	NWR
Vol, veh/h	50	95	90	650	280	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	100	95	684	295	63

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1200	326	358 0
Stage 1	326	-	- -
Stage 2	874	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	204	715	1201 -
Stage 1	731	-	- -
Stage 2	408	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	188	715	1201 -
Mov Cap-2 Maneuver	188	-	- -
Stage 1	731	-	- -
Stage 2	376	-	- -

Approach	SB	SE	NW
HCM Control Delay, s	18	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	1201	-	188	715
HCM Lane V/C Ratio	-	-	0.079	-	0.28	0.14
HCM Control Delay (s)	-	-	8.3	-	31.4	10.9
HCM Lane LOS	-	-	A	-	D	B
HCM 95th %tile Q(veh)	-	-	0.3	-	1.1	0.5

Intersection

Int Delay, s/veh 24.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	80	1005	445	85	110	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	1058	468	89	116	53

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	558	0	1739
Stage 1	-	-	513
Stage 2	-	-	1226
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1013	-	~ 96
Stage 1	-	-	601
Stage 2	-	-	277
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1013	-	~ 77
Mov Cap-2 Maneuver	-	-	~ 77
Stage 1	-	-	601
Stage 2	-	-	221

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	262.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1013	-	-	-	77	561
HCM Lane V/C Ratio	0.083	-	-	-	1.504	0.094
HCM Control Delay (s)	8.9	0	-	-	\$ 376	12.1
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	9.4	0.3

Notes

-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 19.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	435	135	80	80	120	280
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	200
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	458	142	84	84	126	295

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	168	0	1184
Stage 1	-	-	126
Stage 2	-	-	1058
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1410	-	209
Stage 1	-	-	900
Stage 2	-	-	334
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1410	-	135
Mov Cap-2 Maneuver	-	-	135
Stage 1	-	-	900
Stage 2	-	-	216

Approach	EB	WB	SB
HCM Control Delay, s	6.7	0	44.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1410	-	-	-	135	924
HCM Lane V/C Ratio	0.325	-	-	-	0.936	0.319
HCM Control Delay (s)	8.8	0	-	-	124.1	10.7
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	1.4	-	-	-	6.4	1.4

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	1	5	1	1	10	5	280	5	25	470	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	1	5	1	1	11	5	295	5	26	495	42





















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	882	879	516	880	897	297	537	0	0	300	0	0
Stage 1	568	568	-	308	308	-	-	-	-	-	-	-
Stage 2	314	311	-	572	589	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	267	286	559	268	279	742	1031	-	-	1261	-	-
Stage 1	508	506	-	702	660	-	-	-	-	-	-	-
Stage 2	697	658	-	505	495	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	255	276	559	257	269	742	1031	-	-	1261	-	-
Mov Cap-2 Maneuver	255	276	-	257	269	-	-	-	-	-	-	-
Stage 1	505	491	-	698	656	-	-	-	-	-	-	-
Stage 2	682	654	-	484	480	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	11.5	0.1	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1031	-	-	342	569	1261	-	-
HCM Lane V/C Ratio	0.005	-	-	0.034	0.022	0.021	-	-
HCM Control Delay (s)	8.5	0	-	15.9	11.5	7.9	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

HCM 2010 Signalized Intersection Summary
 25: 200th Ave Ct E & 104th St

Projected 2035 Baseline
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	5	45	1	1	5	30	315	1	10	915	140
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	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	111	5	47	1	1	5	32	332	1	11	963	147
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	8	169	112	35	111	365	1289	4	834	1293	1099
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1558	70	1583	94	323	1043	506	1856	6	1043	1863	1583
Grp Volume(v), veh/h	116	0	47	7	0	0	32	0	333	11	963	147
Grp Sat Flow(s),veh/h/ln	1629	0	1583	1460	0	0	506	0	1862	1043	1863	1583
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	0.0	1.7	0.0	2.7	0.2	13.2	1.3
Cycle Q Clear(g_c), s	2.5	0.0	1.1	2.5	0.0	0.0	14.9	0.0	2.7	2.8	13.2	1.3
Prop In Lane	0.96		1.00	0.14		0.71	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	349	0	169	258	0	0	365	0	1293	834	1293	1099
V/C Ratio(X)	0.33	0.00	0.28	0.03	0.00	0.00	0.09	0.00	0.26	0.01	0.74	0.13
Avail Cap(c_a), veh/h	762	0	630	717	0	0	466	0	1666	1043	1667	1417
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	16.5	16.1	0.0	0.0	8.6	0.0	2.3	2.8	3.9	2.1
Incr Delay (d2), s/veh	0.6	0.0	0.9	0.0	0.0	0.0	0.1	0.0	0.1	0.0	1.4	0.1
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	1.3	0.0	0.5	0.1	0.0	0.0	0.3	0.0	1.3	0.0	6.9	0.5
LnGrp Delay(d),s/veh	17.7	0.0	17.4	16.2	0.0	0.0	8.7	0.0	2.4	2.8	5.2	2.1
LnGrp LOS	B		B	B			A		A	A	A	A
Approach Vol, veh/h		163			7			365			1121	
Approach Delay, s/veh		17.6			16.2			2.9			4.8	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.9		8.3		31.9		8.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		16.0		36.0		16.0				
Max Q Clear Time (g_c+I1), s		16.9		4.5		15.2		4.5				
Green Ext Time (p_c), s		11.1		0.5		11.7		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			5.7									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
 26: 214th Ave E & S Prairie Road

Projected 2035 Baseline
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Volume (veh/h)	45	320	445	5	330	185	215	360	5	305	730	50
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	1900	1881	1881	1900	1881	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	47	337	468	5	347	195	226	379	5	321	768	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	100	491	519	58	367	204	246	653	9	545	806	0
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.06	0.35	0.35	0.14	0.43	0.00
Sat Flow, veh/h	116	1513	1599	4	1130	628	1792	1852	24	1792	1881	0
Grp Volume(v), veh/h	384	0	468	547	0	0	226	0	384	321	768	0
Grp Sat Flow(s),veh/h/ln	1628	0	1599	1763	0	0	1792	0	1877	1792	1881	0
Q Serve(g_s), s	0.0	0.0	18.1	4.3	0.0	0.0	4.0	0.0	10.8	6.8	25.5	0.0
Cycle Q Clear(g_c), s	12.6	0.0	18.1	19.7	0.0	0.0	4.0	0.0	10.8	6.8	25.5	0.0
Prop In Lane	0.12		1.00	0.01		0.36	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	591	0	519	628	0	0	246	0	662	545	806	0
V/C Ratio(X)	0.65	0.00	0.90	0.87	0.00	0.00	0.92	0.00	0.58	0.59	0.95	0.00
Avail Cap(c_a), veh/h	591	0	519	628	0	0	246	0	662	575	814	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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.7	0.0	20.9	21.4	0.0	0.0	20.1	0.0	17.1	10.9	17.9	0.0
Incr Delay (d2), s/veh	2.5	0.0	18.9	12.7	0.0	0.0	36.4	0.0	1.3	1.4	20.8	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	0.4	0.0	10.6	11.8	0.0	0.0	4.5	0.0	5.8	3.5	17.7	0.0
LnGrp Delay(d),s/veh	21.2	0.0	39.8	34.0	0.0	0.0	56.4	0.0	18.3	12.3	38.7	0.0
LnGrp LOS	C		D	C			E		B	B	D	
Approach Vol, veh/h		852			547			610			1089	
Approach Delay, s/veh		31.4			34.0			32.5			30.9	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.9	26.8		25.0	8.0	31.7		25.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	10.0	22.0		21.0	4.0	28.0		21.0				
Max Q Clear Time (g_c+1), s	10.8	12.8		20.1	6.0	27.5		21.7				
Green Ext Time (p_c), s	0.2	3.7		0.6	0.0	0.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			31.9									
HCM 2010 LOS			C									

Intersection												
Int Delay, s/veh	11.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	75	10	5	20	5	25	5	475	15	20	825	175
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	0	0	0	1	1	1	1	1	1
Mvmt Flow	79	11	5	21	5	26	5	500	16	21	868	184




















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1537	1529	961	1529	1613	508	1053	0	0	516	0	0
Stage 1	1003	1003	-	518	518	-	-	-	-	-	-	-
Stage 2	534	526	-	1011	1095	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.5	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	95	117	311	97	105	569	665	-	-	1055	-	-
Stage 1	292	320	-	544	536	-	-	-	-	-	-	-
Stage 2	530	529	-	291	292	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	85	114	311	87	102	569	665	-	-	1055	-	-
Mov Cap-2 Maneuver	85	114	-	87	102	-	-	-	-	-	-	-
Stage 1	290	314	-	540	532	-	-	-	-	-	-	-
Stage 2	497	525	-	271	286	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	190.3	39.7	0.1	0.2
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	665	-	-	91	155	1055	-
HCM Lane V/C Ratio	0.008	-	-	1.041	0.34	0.02	-
HCM Control Delay (s)	10.5	-	-	190.3	39.7	8.5	-
HCM Lane LOS	B	-	-	F	E	A	-
HCM 95th %tile Q(veh)	0	-	-	6.2	1.4	0.1	-

HCM 2010 Signalized Intersection Summary
 28: 214th Ave E & 120th St E

Projected 2035 Baseline
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	310	245	125	25	95	55	85	210	15	90	420	430
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	1810	1810	1900	1827	1827	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	326	258	132	26	100	58	89	221	16	95	442	453
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	4	4	4	2	2	2	2	2	2
Cap, veh/h	543	425	217	357	408	237	168	357	21	192	648	687
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1189	1130	578	971	1086	630	136	823	49	210	1495	1583
Grp Volume(v), veh/h	326	0	390	26	0	158	326	0	0	537	0	453
Grp Sat Flow(s),veh/h/ln	1189	0	1708	971	0	1716	1008	0	0	1705	0	1583
Q Serve(g_s), s	10.9	0.0	7.8	0.9	0.0	2.7	2.2	0.0	0.0	0.0	0.0	9.5
Cycle Q Clear(g_c), s	13.6	0.0	7.8	8.7	0.0	2.7	12.8	0.0	0.0	10.6	0.0	9.5
Prop In Lane	1.00		0.34	1.00		0.37	0.27		0.05	0.18		1.00
Lane Grp Cap(c), veh/h	543	0	642	357	0	645	546	0	0	841	0	687
V/C Ratio(X)	0.60	0.00	0.61	0.07	0.00	0.25	0.60	0.00	0.00	0.64	0.00	0.66
Avail Cap(c_a), veh/h	549	0	650	362	0	653	626	0	0	951	0	791
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	10.6	14.1	0.0	9.0	8.7	0.0	0.0	9.6	0.0	9.4
Incr Delay (d2), s/veh	1.8	0.0	1.6	0.1	0.0	0.2	1.2	0.0	0.0	1.2	0.0	1.7
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	3.8	0.0	3.9	0.3	0.0	1.3	2.7	0.0	0.0	5.2	0.0	4.3
LnGrp Delay(d),s/veh	15.5	0.0	12.2	14.2	0.0	9.2	10.0	0.0	0.0	10.8	0.0	11.1
LnGrp LOS	B		B	B		A	A			B		B
Approach Vol, veh/h		716			184			326			990	
Approach Delay, s/veh		13.7			9.9			10.0			10.9	
Approach LOS		B			A			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.2		19.8		22.2		19.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		21.0		16.0		21.0		16.0				
Max Q Clear Time (g_c+I1), s		14.8		15.6		12.6		10.7				
Green Ext Time (p_c), s		3.4		0.2		4.2		2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			11.6									
HCM 2010 LOS			B									

Intersection

Int Delay, s/veh 128

Movement	EBT	EBR	WBL	WBT	NEL	NER
Vol, veh/h	1155	170	125	425	110	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	2	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	2	3	3
Mvmt Flow	1216	179	132	447	116	116

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1395
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	490
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	490
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NE
HCM Control Delay, s	0	3.4	\$ 1210.8
HCM LOS			F

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	68	-	-	490	-
HCM Lane V/C Ratio	3.406	-	-	0.269	-
HCM Control Delay (s)	\$ 1210.8	-	-	15	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	24.1	-	-	1.1	-

Notes

-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	230	75	35	185	60	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	242	79	37	195	63	32

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	321
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1239
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1239
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	547	-	-	1239	-
HCM Lane V/C Ratio	0.173	-	-	0.03	-
HCM Control Delay (s)	13	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	95	630	460	5	10	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	663	484	5	11	111

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	489	0	487
Stage 1	-	-	487
Stage 2	-	-	863
Critical Hdwy	4.12	-	6.22
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	1074	-	581
Stage 1	-	-	618
Stage 2	-	-	413
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1074	-	581
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	618
Stage 2	-	-	352

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	458
HCM Lane V/C Ratio	0.093	-	-	-	0.264
HCM Control Delay (s)	8.7	0	-	-	15.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.1

Intersection

Int Delay, s/veh 1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	15	150	25	60	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	16	158	26	63	111

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	408	171	0
Stage 1	171	-	-
Stage 2	237	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	599	873	1391
Stage 1	859	-	-
Stage 2	802	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	570	873	1391
Mov Cap-2 Maneuver	570	-	-
Stage 1	859	-	-
Stage 2	764	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	771	1391	-
HCM Lane V/C Ratio	-	-	0.027	0.045	-
HCM Control Delay (s)	-	-	9.8	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection

Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	5	70	185	0	75	30	1	0	40	40	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	74	195	0	79	32	1	0	42	42	79
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	8.8	8.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	2%	71%	2%
Vol Thru, %	26%	27%	28%	87%
Vol Right, %	48%	71%	1%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	260	106	46
LT Vol	40	5	75	1
Through Vol	40	70	30	40
RT Vol	75	185	1	5
Lane Flow Rate	163	274	112	48
Geometry Grp	1	1	1	1
Degree of Util (X)	0.209	0.316	0.151	0.066
Departure Headway (Hd)	4.603	4.152	4.865	4.928
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	777	865	735	723
Service Time	2.647	2.184	2.906	2.981
HCM Lane V/C Ratio	0.21	0.317	0.152	0.066
HCM Control Delay	8.9	9.1	8.8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	1.4	0.5	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	40	5
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	1	42	5
Number of Lanes	0	0	1	0

Approach SB

Opposing Approach NB

Opposing Lanes 1

Conflicting Approach Left WB

Conflicting Lanes Left 1

Conflicting Approach Right EB

Conflicting Lanes Right 1

HCM Control Delay 8.3

HCM LOS A

Lane

Intersection

Intersection Delay, s/veh10.9
 Intersection LOS B

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Vol, veh/h	0	20	85	0	35	155	0	365	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	21	89	0	37	163	0	384	53
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach

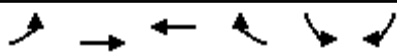
	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.8	9.4	12.2
HCM LOS	A	A	B

Lane

	NBLn1	EBLn1	SBLn1
Vol Left, %	18%	19%	0%
Vol Thru, %	82%	0%	88%
Vol Right, %	0%	81%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	190	105	415
LT Vol	35	20	0
Through Vol	155	0	365
RT Vol	0	85	50
Lane Flow Rate	200	111	437
Geometry Grp	1	1	1
Degree of Util (X)	0.261	0.15	0.529
Departure Headway (Hd)	4.701	4.88	4.359
Convergence, Y/N	Yes	Yes	Yes
Cap	762	732	826
Service Time	2.741	2.93	2.391
HCM Lane V/C Ratio	0.262	0.152	0.529
HCM Control Delay	9.4	8.8	12.2
HCM Lane LOS	A	A	B
HCM 95th-tile Q	1	0.5	3.2

HCM 2010 Signalized Intersection Summary
4: Church Lake Rd & W Tapps Hwy

Projected 2035 With Improvements
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Volume (veh/h)	135	35	65	120	390	155		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	142	37	68	126	411	163		
Adj No. of Lanes	1	1	1	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	570	576	181	336	612	546		
Arrive On Green	0.31	0.31	0.31	0.31	0.34	0.34		
Sat Flow, veh/h	1184	1863	586	1085	1774	1583		
Grp Volume(v), veh/h	142	37	0	194	411	163		
Grp Sat Flow(s),veh/h/ln	1184	1863	0	1671	1774	1583		
Q Serve(g_s), s	2.5	0.3	0.0	2.1	4.6	1.7		
Cycle Q Clear(g_c), s	4.6	0.3	0.0	2.1	4.6	1.7		
Prop In Lane	1.00			0.65	1.00	1.00		
Lane Grp Cap(c), veh/h	570	576	0	517	612	546		
V/C Ratio(X)	0.25	0.06	0.00	0.38	0.67	0.30		
Avail Cap(c_a), veh/h	1022	1288	0	1156	1227	1095		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.0	5.6	0.0	6.2	6.5	5.5		
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.5	1.3	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	0.2	0.0	1.0	2.4	0.8		
LnGrp Delay(d),s/veh	8.3	5.7	0.0	6.7	7.8	5.8		
LnGrp LOS	A	A		A	A	A		
Approach Vol, veh/h		179	194		574			
Approach Delay, s/veh		7.7	6.7		7.2			
Approach LOS		A	A		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				11.2		12.0		11.2
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				16.0		16.0		16.0
Max Q Clear Time (g_c+I1), s				6.6		6.6		4.1
Green Ext Time (p_c), s				1.3		1.4		1.5
Intersection Summary								
HCM 2010 Ctrl Delay			7.2					
HCM 2010 LOS			A					

Intersection

Int Delay, s/veh 2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	55	15	500	55	30	925
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	58	16	526	58	32	974













Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1592	555	0 0 584 0
Stage 1	555	-	- - - -
Stage 2	1037	-	- - - -
Critical Hdwy	6.4	6.2	- - 4.11 -
Critical Hdwy Stg 1	5.4	-	- - - -
Critical Hdwy Stg 2	5.4	-	- - - -
Follow-up Hdwy	3.5	3.3	- - 2.209 -
Pot Cap-1 Maneuver	119	535	- - 996 -
Stage 1	579	-	- - - -
Stage 2	345	-	- - - -
Platoon blocked, %			- - - -
Mov Cap-1 Maneuver	111	535	- - 996 -
Mov Cap-2 Maneuver	111	-	- - - -
Stage 1	579	-	- - - -
Stage 2	321	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	60.6	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	134	996	-
HCM Lane V/C Ratio	-	-	0.55	0.032	-
HCM Control Delay (s)	-	-	60.6	8.7	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	2.7	0.1	-

HCM 2010 Signalized Intersection Summary
6: 214th Ave E & Kelly Lake Rd E

Projected 2035 With Improvements
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Volume (veh/h)	60	305	145	515	855	100		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1845	1881	1881	1863	1900		
Adj Flow Rate, veh/h	63	321	153	542	900	105		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	3	3	1	1	2	2		
Cap, veh/h	396	353	216	1281	962	112		
Arrive On Green	0.23	0.23	0.05	0.68	0.59	0.59		
Sat Flow, veh/h	1757	1568	1792	1881	1638	191		
Grp Volume(v), veh/h	63	321	153	542	0	1005		
Grp Sat Flow(s),veh/h/ln	1757	1568	1792	1881	0	1829		
Q Serve(g_s), s	2.5	17.0	2.7	11.0	0.0	43.0		
Cycle Q Clear(g_c), s	2.5	17.0	2.7	11.0	0.0	43.0		
Prop In Lane	1.00	1.00	1.00			0.10		
Lane Grp Cap(c), veh/h	396	353	216	1281	0	1074		
V/C Ratio(X)	0.16	0.91	0.71	0.42	0.00	0.94		
Avail Cap(c_a), veh/h	412	367	216	1367	0	1157		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	26.6	32.2	20.3	6.1	0.0	16.1		
Incr Delay (d2), s/veh	0.2	25.3	10.3	0.2	0.0	13.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	16.0	2.8	5.6	0.0	25.4		
LnGrp Delay(d),s/veh	26.8	57.5	30.5	6.3	0.0	29.4		
LnGrp LOS	C	E	C	A		C		
Approach Vol, veh/h	384			695	1005			
Approach Delay, s/veh	52.5			11.6	29.4			
Approach LOS	D			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		62.1		23.2	8.0	54.1		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		62.0		20.0	4.0	54.0		
Max Q Clear Time (g_c+I1), s		13.0		19.0	4.7	45.0		
Green Ext Time (p_c), s		10.5		0.2	0.0	5.2		
Intersection Summary								
HCM 2010 Ctrl Delay			27.7					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
 7: 214th Ave E & Sumner Buckley Hwy

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	285	165	105	15	55	30	35	390	20	75	815	215
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	1881	1881	1900	1863	1863	1900	1900	1881	1900	1900	1863	1863
Adj Flow Rate, veh/h	300	174	111	16	58	32	37	411	21	79	858	226
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	388	276	176	227	290	160	55	497	23	105	839	995
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1314	1075	686	1090	1130	623	0	791	37	79	1335	1583
Grp Volume(v), veh/h	300	0	285	16	0	90	469	0	0	937	0	226
Grp Sat Flow(s),veh/h/ln	1314	0	1760	1090	0	1753	828	0	0	1414	0	1583
Q Serve(g_s), s	15.2	0.0	10.0	0.9	0.0	2.8	0.0	0.0	0.0	0.0	0.0	4.3
Cycle Q Clear(g_c), s	18.0	0.0	10.0	11.0	0.0	2.8	44.0	0.0	0.0	44.0	0.0	4.3
Prop In Lane	1.00		0.39	1.00		0.36	0.08		0.04	0.08		1.00
Lane Grp Cap(c), veh/h	388	0	453	227	0	451	576	0	0	945	0	995
V/C Ratio(X)	0.77	0.00	0.63	0.07	0.00	0.20	0.81	0.00	0.00	0.99	0.00	0.23
Avail Cap(c_a), veh/h	388	0	453	227	0	451	576	0	0	945	0	995
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	23.0	27.9	0.0	20.4	19.4	0.0	0.0	12.4	0.0	5.6
Incr Delay (d2), s/veh	9.3	0.0	2.8	0.1	0.0	0.2	8.8	0.0	0.0	27.2	0.0	0.1
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	6.8	0.0	5.2	0.3	0.0	1.4	8.6	0.0	0.0	25.1	0.0	1.9
LnGrp Delay(d),s/veh	37.1	0.0	25.8	28.0	0.0	20.6	28.2	0.0	0.0	39.6	0.0	5.7
LnGrp LOS	D		C	C		C	C			D		A
Approach Vol, veh/h		585			106			469			1163	
Approach Delay, s/veh		31.6			21.7			28.2			33.0	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.0		22.0		48.0		22.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		44.0		18.0		44.0		18.0				
Max Q Clear Time (g_c+I1), s		46.0		20.0		46.0		13.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				31.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
 8: 214th Ave E & 96th St E

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↑	↔	↔	↔	↔
Volume (veh/h)	20	15	60	85	5	20	30	355	50	85	850	15
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	1900	1900	1900	1900	1900	1900	1881	1881	1881	1891	1891	1910
Adj Flow Rate, veh/h	21	16	63	89	5	21	32	374	53	89	895	16
Adj No. of Lanes	0	1	1	0	1	0	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	254	146	224	308	18	34	386	1205	1025	734	1187	21
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	713	1048	1615	952	130	242	616	1881	1599	971	1852	33
Grp Volume(v), veh/h	37	0	63	115	0	0	32	374	53	89	0	911
Grp Sat Flow(s),veh/h/ln1760	0	1615	1324	0	0	616	1881	1599	971	0	1885	
Q Serve(g_s), s	0.0	0.0	1.3	2.5	0.0	0.0	1.4	3.2	0.4	1.6	0.0	12.2
Cycle Q Clear(g_c), s	0.6	0.0	1.3	3.1	0.0	0.0	13.6	3.2	0.4	4.9	0.0	12.2
Prop In Lane	0.57		1.00	0.77		0.18	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	400	0	224	360	0	0	386	1205	1025	734	0	1208
V/C Ratio(X)	0.09	0.00	0.28	0.32	0.00	0.00	0.08	0.31	0.05	0.12	0.00	0.75
Avail Cap(c_a), veh/h	878	0	712	783	0	0	602	1865	1585	1074	0	1868
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	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	14.0	14.9	0.0	0.0	9.3	2.9	2.4	4.0	0.0	4.5
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.5	0.0	0.0	0.1	0.1	0.0	0.1	0.0	1.0
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/ln0.3	0.0	0.6	1.1	0.0	0.0	0.2	1.7	0.2	0.4	0.0	6.4	
LnGrp Delay(d),s/veh	13.8	0.0	14.7	15.4	0.0	0.0	9.3	3.1	2.4	4.1	0.0	5.5
LnGrp LOS	B		B	B			A	A	A	A		A
Approach Vol, veh/h		100			115			459			1000	
Approach Delay, s/veh		14.4			15.4			3.4			5.4	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.3		9.0		27.3		9.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		16.0		36.0		16.0				
Max Q Clear Time (g_c+I1), s		15.6		3.3		14.2		5.1				
Green Ext Time (p_c), s		7.7		0.6		7.9		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			6.1									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
 9: 181st Ave E/Veterans Memorial Dr & SR 410

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1140	2185	130	65	1450	65	70	10	35	110	30	595
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	1881	1881	1900	1863	1863	1863	1900	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	1200	2300	137	68	1526	68	74	11	37	116	32	626
Adj No. of Lanes	2	2	0	1	2	1	0	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	1203	2533	149	82	1552	694	110	22	38	197	229	743
Arrive On Green	0.35	0.74	0.74	0.09	0.88	0.88	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	3476	3430	202	1774	3539	1583	528	176	307	1352	1863	1583
Grp Volume(v), veh/h	1200	1187	1250	68	1526	68	122	0	0	116	32	626
Grp Sat Flow(s),veh/h/ln	1738	1787	1845	1774	1770	1583	1011	0	0	1352	1863	1583
Q Serve(g_s), s	44.8	67.3	71.3	4.9	50.1	0.8	13.6	0.0	0.0	0.0	2.0	0.1
Cycle Q Clear(g_c), s	44.8	67.3	71.3	4.9	50.1	0.8	15.6	0.0	0.0	12.8	2.0	0.1
Prop In Lane	1.00		0.11	1.00		1.00	0.61		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	1203	1320	1363	82	1552	694	169	0	0	197	229	743
V/C Ratio(X)	1.00	0.90	0.92	0.83	0.98	0.10	0.72	0.00	0.00	0.59	0.14	0.84
Avail Cap(c_a), veh/h	1203	1320	1363	82	1552	694	169	0	0	197	229	743
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	0.65	0.65	0.65	1.00	0.00	0.00	0.43	0.43	0.43
Uniform Delay (d), s/veh	42.4	13.2	13.8	58.5	7.6	4.5	56.7	0.0	0.0	55.6	50.9	30.3
Incr Delay (d2), s/veh	25.3	10.0	11.2	35.0	14.9	0.2	14.0	0.0	0.0	1.9	0.1	4.0
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	25.7	36.3	40.0	3.2	24.8	0.3	5.0	0.0	0.0	4.2	1.0	20.5
LnGrp Delay(d),s/veh	67.7	23.3	25.0	93.5	22.4	4.7	70.7	0.0	0.0	57.5	51.0	34.2
LnGrp LOS	E	C	C	F	C	A	E			E	D	C
Approach Vol, veh/h		3637			1662			122			774	
Approach Delay, s/veh		38.5			24.6			70.7			38.4	
Approach LOS		D			C			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.0	10.0	100.0		20.0	49.0	61.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		16.0	6.0	96.0		16.0	45.0	57.0				
Max Q Clear Time (g_c+I1), s		17.6	6.9	73.3		14.8	46.8	52.1				
Green Ext Time (p_c), s		0.0	0.0	16.1		0.6	0.0	3.3				
Intersection Summary												
HCM 2010 Ctrl Delay			35.4									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary

Projected 2035 With Improvements

10: 184th Ave E & Veterans Memorial Dr/Sumner Buckley Hwy

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	770	30	50	845	80	85	130	30	45	70	195
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	1863	1863	1863	1863	1863	1900	1827	1827	1900	1900	1900	1900
Adj Flow Rate, veh/h	126	811	32	53	889	84	89	137	32	47	74	205
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	0	0	0
Cap, veh/h	234	1175	999	336	1057	100	214	353	82	316	110	304
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	576	1863	1583	650	1676	158	1075	1433	335	1236	446	1236
Grp Volume(v), veh/h	126	811	32	53	0	973	89	0	169	47	0	279
Grp Sat Flow(s),veh/h/ln	576	1863	1583	650	0	1835	1075	0	1768	1236	0	1682
Q Serve(g_s), s	13.9	18.5	0.5	3.8	0.0	27.1	5.3	0.0	5.2	2.1	0.0	9.7
Cycle Q Clear(g_c), s	41.0	18.5	0.5	22.3	0.0	27.1	15.0	0.0	5.2	7.3	0.0	9.7
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.19	1.00		0.73
Lane Grp Cap(c), veh/h	234	1175	999	336	0	1157	214	0	435	316	0	414
V/C Ratio(X)	0.54	0.69	0.03	0.16	0.00	0.84	0.42	0.00	0.39	0.15	0.00	0.67
Avail Cap(c_a), veh/h	234	1175	999	336	0	1157	214	0	435	316	0	414
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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	7.8	4.5	15.1	0.0	9.4	28.9	0.0	20.4	23.5	0.0	22.1
Incr Delay (d2), s/veh	2.5	1.7	0.0	0.2	0.0	5.7	5.8	0.0	2.6	1.0	0.0	8.5
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	2.4	9.8	0.2	0.7	0.0	15.1	1.9	0.0	2.8	0.8	0.0	5.5
LnGrp Delay(d),s/veh	28.2	9.6	4.5	15.3	0.0	15.1	34.8	0.0	23.0	24.5	0.0	30.6
LnGrp LOS	C	A	A	B		B	C		C	C		C
Approach Vol, veh/h		969			1026			258			326	
Approach Delay, s/veh		11.8			15.1			27.1			29.7	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.0		45.0		20.0		45.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		41.0		16.0		41.0				
Max Q Clear Time (g_c+I1), s		17.0		43.0		11.7		29.1				
Green Ext Time (p_c), s		0.0		0.0		1.1		8.5				
Intersection Summary												
HCM 2010 Ctrl Delay				16.9								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 11: Locust Ave E/Locust Ave & Sumner Buckley Hwy

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	225	805	30	50	470	195	20	15	40	235	20	230
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	1881	1881	1900	1844	1844	1881	1881	1881	1881	1928	1909	1909
Adj Flow Rate, veh/h	237	847	32	53	495	205	21	16	42	247	21	242
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	1	1	1
Cap, veh/h	362	945	36	238	582	241	95	82	123	269	19	569
Arrive On Green	0.09	0.52	0.52	0.04	0.47	0.47	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1792	1801	68	1756	1240	514	102	318	477	643	74	1623
Grp Volume(v), veh/h	237	0	879	53	0	700	79	0	0	268	0	242
Grp Sat Flow(s),veh/h/ln	1792	0	1869	1756	0	1753	897	0	0	716	0	1623
Q Serve(g_s), s	4.2	0.0	28.2	1.0	0.0	23.5	0.4	0.0	0.0	12.7	0.0	7.6
Cycle Q Clear(g_c), s	4.2	0.0	28.2	1.0	0.0	23.5	13.2	0.0	0.0	12.7	0.0	7.6
Prop In Lane	1.00		0.04	1.00		0.29	0.27		0.53	0.92		1.00
Lane Grp Cap(c), veh/h	362	0	981	238	0	823	300	0	0	0	0	569
V/C Ratio(X)	0.65	0.00	0.90	0.22	0.00	0.85	0.26	0.00	0.00	0.00	0.00	0.43
Avail Cap(c_a), veh/h	384	0	1064	277	0	919	300	0	0	0	0	1026
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	14.2	13.3	0.0	15.6	19.7	0.0	0.0	0.0	0.0	16.5
Incr Delay (d2), s/veh	3.7	0.0	9.5	0.5	0.0	7.0	0.5	0.0	0.0	0.0	0.0	0.5
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	2.5	0.0	17.0	0.5	0.0	12.9	1.2	0.0	0.0	0.0	0.0	3.5
LnGrp Delay(d),s/veh	17.0	0.0	23.8	13.7	0.0	22.7	20.2	0.0	0.0	0.0	0.0	17.0
LnGrp LOS	B		C	B		C	C					B
Approach Vol, veh/h	1116			753			79			510		
Approach Delay, s/veh	22.3			22.0			20.2			8.1		
Approach LOS	C			C			C			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.2	6.5	39.0		21.2	10.2	35.3				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		16.0	4.0	38.0		36.0	7.0	35.0				
Max Q Clear Time (g_c+1), s		15.2	3.0	30.2		14.7	6.2	25.5				
Green Ext Time (p_c), s		0.3	0.0	4.9		2.5	0.1	5.6				
Intersection Summary												
HCM 2010 Ctrl Delay	19.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
 12: 184th Ave E & SR 410

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	65	1935	350	180	1410	125	215	160	220	260	125	5
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	1872	1872	1872	1835	1835	1835	1863	1863	1863	1881	1881	1881
Adj Flow Rate, veh/h	68	2037	368	189	1484	132	226	168	0	274	132	0
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	3	3	3	2	2	2	2	2	2
Cap, veh/h	222	1888	845	244	1905	852	373	202	172	341	184	157
Arrive On Green	0.25	1.00	1.00	0.14	0.55	0.55	0.11	0.11	0.00	0.10	0.10	0.00
Sat Flow, veh/h	1783	3557	1591	1748	3487	1560	3442	1863	1583	3476	1881	1599
Grp Volume(v), veh/h	68	2037	368	189	1484	132	226	168	0	274	132	0
Grp Sat Flow(s),veh/h/ln	1783	1778	1591	1748	1744	1560	1721	1863	1583	1738	1881	1599
Q Serve(g_s), s	4.0	0.0	0.0	13.6	43.7	5.5	8.1	11.5	0.0	10.0	8.8	0.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	13.6	43.7	5.5	8.1	11.5	0.0	10.0	8.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	1888	845	244	1905	852	373	202	172	341	184	157
V/C Ratio(X)	0.31	1.08	0.44	0.77	0.78	0.15	0.61	0.83	0.00	0.80	0.72	0.00
Avail Cap(c_a), veh/h	222	1888	845	244	1905	852	450	244	207	428	232	197
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)	0.28	0.28	0.28	0.31	0.31	0.31	1.00	1.00	0.00	0.85	0.85	0.00
Uniform Delay (d), s/veh	44.3	0.0	0.0	53.9	23.3	14.6	55.3	56.8	0.0	57.4	56.9	0.0
Incr Delay (d2), s/veh	0.2	38.8	0.5	4.8	1.0	0.1	1.6	18.2	0.0	7.4	6.5	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	2.0	10.2	0.1	6.9	21.1	2.4	4.0	7.0	0.0	5.2	5.0	0.0
LnGrp Delay(d),s/veh	44.5	38.8	0.5	58.8	24.3	14.7	56.9	75.0	0.0	64.8	63.3	0.0
LnGrp LOS	D	F	A	E	C	B	E	E		E	E	
Approach Vol, veh/h		2473			1805			394			406	
Approach Delay, s/veh		33.3			27.2			64.6			64.3	
Approach LOS		C			C			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.1	22.2	73.0		16.7	20.2	75.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		17.0	12.0	69.0		16.0	10.0	71.0				
Max Q Clear Time (g_c+I1), s		13.5	15.6	2.0		12.0	6.0	45.7				
Green Ext Time (p_c), s		0.6	0.0	24.7		0.7	0.3	9.3				
Intersection Summary												
HCM 2010 Ctrl Delay			36.0									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 13: 192nd Ave & SR 410

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	155	2365	240	100	1595	245	245	255	50	360	180	155
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	1844	1844	1844	1853	1853	1853	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	163	2489	253	105	1679	258	258	268	53	379	189	163
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	2048	916	81	1845	971	265	287	244	318	315	268
Arrive On Green	0.11	0.58	0.58	0.09	1.00	1.00	0.08	0.15	0.15	0.09	0.17	0.17
Sat Flow, veh/h	1756	3504	1568	1765	3522	1575	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	163	2489	253	105	1679	258	258	268	53	379	189	163
Grp Sat Flow(s),veh/h/ln	1756	1752	1568	1765	1761	1575	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	11.9	76.0	6.9	6.0	0.0	0.0	9.7	18.5	3.8	12.0	12.2	12.4
Cycle Q Clear(g_c), s	11.9	76.0	6.9	6.0	0.0	0.0	9.7	18.5	3.8	12.0	12.2	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	2048	916	81	1845	971	265	287	244	318	315	268
V/C Ratio(X)	0.87	1.22	0.28	1.29	0.91	0.27	0.97	0.94	0.22	1.19	0.60	0.61
Avail Cap(c_a), veh/h	203	2048	916	81	1845	971	265	287	244	318	315	268
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)	0.09	0.09	0.09	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.2	27.0	5.9	59.0	0.0	0.0	59.9	54.4	48.2	59.0	49.9	50.0
Incr Delay (d2), s/veh	3.7	97.2	0.0	187.3	6.2	0.1	48.1	38.9	2.0	113.6	8.2	9.9
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	5.9	64.1	3.0	7.1	1.6	0.0	6.4	12.6	1.8	10.7	7.0	6.2
LnGrp Delay(d),s/veh	60.9	124.2	6.0	246.3	6.2	0.1	108.0	93.2	50.2	172.6	58.1	59.9
LnGrp LOS	E	F	A	F	A	A	F	F	D	F	E	E
Approach Vol, veh/h		2905			2042			579			731	
Approach Delay, s/veh		110.4			17.7			95.8			117.9	
Approach LOS		F			B			F			F	
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	24.0	10.0	80.0	14.0	26.0	17.9	72.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	20.0	6.0	76.0	10.0	22.0	15.0	67.0				
Max Q Clear Time (g_c+M), s	11.0	20.5	8.0	78.0	11.7	14.4	13.9	2.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.0	0.0	23.8				
Intersection Summary												
HCM 2010 Ctrl Delay					79.7							
HCM 2010 LOS					E							

HCM 2010 Signalized Intersection Summary
 14: 195th Ave & SR 410

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵ ↑↑↑ ↵			↵ ↑↑↑ ↵			↵ ↵ ↵			↵ ↵ ↵		
Volume (veh/h)	10	2460	105	325	1755	10	90	5	335	20	5	10
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	1844	1844	1881	1853	1853	1890	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	2589	111	342	1847	11	95	5	353	21	5	11
Adj No. of Lanes	1	3	0	1	3	0	0	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	2515	107	326	3541	21	332	16	341	207	112	246
Arrive On Green	0.02	1.00	1.00	0.37	1.00	1.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1756	4953	210	1765	5190	31	1291	75	1583	1019	519	1142
Grp Volume(v), veh/h	11	1746	954	342	1200	658	100	0	353	21	0	16
Grp Sat Flow(s),veh/h/ln	1756	1678	1807	1765	1687	1848	1366	0	1583	1019	0	1661
Q Serve(g_s), s	0.8	66.0	64.6	24.0	0.0	0.0	7.7	0.0	28.0	2.3	0.0	1.0
Cycle Q Clear(g_c), s	0.8	66.0	64.6	24.0	0.0	0.0	8.7	0.0	28.0	11.0	0.0	1.0
Prop In Lane	1.00		0.12	1.00		0.02	0.95		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	18	1704	917	326	2301	1261	348	0	341	207	0	358
V/C Ratio(X)	0.62	1.02	1.04	1.05	0.52	0.52	0.29	0.00	1.04	0.10	0.00	0.04
Avail Cap(c_a), veh/h	54	1704	917	326	2301	1261	348	0	341	207	0	358
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.72	0.72	0.72	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.4	0.0	0.0	41.0	0.0	0.0	43.8	0.0	51.0	48.1	0.0	40.4
Incr Delay (d2), s/veh	3.2	14.2	21.7	55.9	0.2	0.3	2.1	0.0	58.1	1.0	0.0	0.2
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	0.4	3.4	5.5	16.6	0.0	0.1	3.3	0.0	17.7	0.7	0.0	0.5
LnGrp Delay(d),s/veh	66.6	14.2	21.7	96.9	0.2	0.3	45.8	0.0	109.1	49.1	0.0	40.6
LnGrp LOS	E	F	F	F	A	A	D		F	D		D
Approach Vol, veh/h	2711			2200			453			37		
Approach Delay, s/veh	17.1			15.2			95.1			45.4		
Approach LOS	B			B			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.0	28.0	70.0		32.0	5.3	92.7				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		28.0	24.0	66.0		28.0	4.0	86.0				
Max Q Clear Time (g_c+1), s		30.0	26.0	68.0		13.0	2.8	2.0				
Green Ext Time (p_c), s		0.0	0.0	0.0		1.8	0.0	78.3				
Intersection Summary												
HCM 2010 Ctrl Delay	23.1											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
 15: S Prairie Road & SR 410

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (veh/h)	80	1535	1085	180	1400	80	665	190	90	130	275	55
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	1844	1862	1862	1863	1863	1919	1835	1835	1872	1827	1827	1827
Adj Flow Rate, veh/h	84	1616	0	189	1474	84	700	200	0	137	289	58
Adj No. of Lanes	1	2	1	1	3	0	3	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	1	3	3	3	2	2	2	4	4	4
Cap, veh/h	231	1905	852	123	3144	179	682	254	0	228	239	203
Arrive On Green	1.00	1.00	0.00	0.14	1.00	1.00	0.18	0.18	0.00	0.13	0.13	0.13
Sat Flow, veh/h	326	3539	1583	1774	4924	281	4928	1835	0	1740	1827	1553
Grp Volume(v), veh/h	84	1616	0	189	1015	543	700	200	0	137	289	58
Grp Sat Flow(s),veh/h/ln	326	1769	1583	1774	1695	1814	1643	1835	0	1740	1827	1553
Q Serve(g_s), s	0.0	0.0	0.0	9.0	0.0	0.0	18.0	13.5	0.0	9.7	17.0	4.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	9.0	0.0	0.0	18.0	13.5	0.0	9.7	17.0	4.4
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	1905	852	123	2165	1158	682	254	0	228	239	203
V/C Ratio(X)	0.36	0.85	0.00	1.54	0.47	0.47	1.03	0.79	0.00	0.60	1.21	0.29
Avail Cap(c_a), veh/h	231	1905	852	123	2165	1158	682	254	0	228	239	203
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.49	0.49	0.49	0.86	0.86	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	56.0	0.0	0.0	53.0	51.2	0.0	53.3	56.5	51.0
Incr Delay (d2), s/veh	0.4	0.5	0.0	261.5	0.4	0.7	38.8	13.3	0.0	4.4	126.7	0.8
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	0.0	0.1	0.0	13.3	0.1	0.2	10.6	7.8	0.0	4.9	17.0	1.9
LnGrp Delay(d),s/veh	0.4	0.5	0.0	317.5	0.4	0.7	91.8	64.5	0.0	57.7	183.2	51.8
LnGrp LOS	A	A		F	A	A	F	E		E	F	D
Approach Vol, veh/h		1700			1747			900			484	
Approach Delay, s/veh		0.5			34.8			85.7			131.9	
Approach LOS		A			C			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		22.0	13.0	74.0		21.0		87.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		18.0	9.0	70.0		17.0		83.0				
Max Q Clear Time (g_c+1), s		20.0	11.0	2.0		19.0		2.0				
Green Ext Time (p_c), s		0.0	0.0	39.5		0.0		43.1				
Intersection Summary												
HCM 2010 Ctrl Delay			41.9									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 16: 200th Ave Ct E & S Prairie Road

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	170	725	930	60	450	60	325	95	70	150	110	65
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	1863	1863	1863	1881	1881	1900	1900	1900	1900	1900	1881	1881
Adj Flow Rate, veh/h	179	763	0	63	474	63	221	269	74	158	116	68
Adj No. of Lanes	1	1	1	1	2	0	1	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	0	0	0	1	1	1
Cap, veh/h	329	888	755	139	1172	155	283	297	253	175	128	265
Arrive On Green	0.12	0.32	0.00	0.08	0.37	0.37	0.16	0.16	0.16	0.17	0.17	0.17
Sat Flow, veh/h	1774	1863	1583	1792	3174	420	1810	1900	1615	1054	774	1599
Grp Volume(v), veh/h	179	763	0	63	266	271	221	269	74	274	0	68
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1792	1787	1807	1810	1900	1615	1828	0	1599
Q Serve(g_s), s	12.3	49.9	0.0	4.4	14.3	14.5	15.3	18.1	5.3	19.1	0.0	4.8
Cycle Q Clear(g_c), s	12.3	49.9	0.0	4.4	14.3	14.5	15.3	18.1	5.3	19.1	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	0.58		1.00
Lane Grp Cap(c), veh/h	329	888	755	139	660	667	283	297	253	303	0	265
V/C Ratio(X)	0.54	0.86	0.00	0.45	0.40	0.41	0.78	0.90	0.29	0.90	0.00	0.26
Avail Cap(c_a), veh/h	329	888	755	139	660	667	292	307	261	338	0	295
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)	0.09	0.09	0.00	0.09	0.09	0.09	0.98	0.98	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	40.1	0.0	57.3	30.4	30.4	52.7	53.9	48.5	53.2	0.0	47.3
Incr Delay (d2), s/veh	0.2	1.1	0.0	0.2	0.2	0.2	12.1	27.5	0.6	25.1	0.0	0.5
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	6.1	26.0	0.0	2.2	7.1	7.3	8.6	11.8	2.4	11.8	0.0	2.2
LnGrp Delay(d),s/veh	51.9	41.2	0.0	57.5	30.5	30.6	64.8	81.4	49.1	78.3	0.0	47.8
LnGrp LOS	D	D		E	C	C	E	F	D	E		D
Approach Vol, veh/h		942			600			564			342	
Approach Delay, s/veh		43.3			33.4			70.7			72.2	
Approach LOS		D			C			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.4	14.1	66.0		25.5	28.1	52.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		21.0	7.0	62.0		24.0	21.0	48.0				
Max Q Clear Time (g_c+I1), s		20.1	6.4	51.9		21.1	14.3	16.5				
Green Ext Time (p_c), s		0.3	0.1	2.9		0.4	0.5	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay			51.2									
HCM 2010 LOS			D									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
 17: SR 410 & 208th Ave E

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩ ↑↑↑			↩ ↑↑ ↩			↩ ↩ ↩			↩ ↩ ↩		
Volume (veh/h)	130	1645	250	130	1225	60	225	35	125	90	55	45
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	1881	1881	1900	1863	1863	1863	1900	1881	1881	1900	1881	1900
Adj Flow Rate, veh/h	137	1732	263	137	1289	63	237	37	132	95	58	47
Adj No. of Lanes	1	3	0	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	165	2010	303	164	1579	706	343	37	443	84	48	16
Arrive On Green	0.03	0.15	0.15	0.03	0.15	0.15	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1792	4505	680	1774	3539	1583	864	135	1599	9	175	56
Grp Volume(v), veh/h	137	1313	682	137	1289	63	274	0	132	200	0	0
Grp Sat Flow(s),veh/h/ln	1792	1712	1761	1774	1770	1583	999	0	1599	240	0	0
Q Serve(g_s), s	4.9	24.3	24.6	5.0	22.9	2.2	0.0	0.0	4.2	0.2	0.0	0.0
Cycle Q Clear(g_c), s	4.9	24.3	24.6	5.0	22.9	2.2	17.8	0.0	4.2	18.0	0.0	0.0
Prop In Lane	1.00		0.39	1.00		1.00	0.86		1.00	0.47		0.23
Lane Grp Cap(c), veh/h	165	1528	786	164	1579	706	380	0	443	148	0	0
V/C Ratio(X)	0.83	0.86	0.87	0.84	0.82	0.09	0.72	0.00	0.30	1.35	0.00	0.00
Avail Cap(c_a), veh/h	165	1528	786	164	1579	706	380	0	443	148	0	0
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.45	0.45	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.0	25.7	25.8	31.0	25.1	16.3	23.4	0.0	18.5	25.5	0.0	0.0
Incr Delay (d2), s/veh	14.5	3.1	6.1	24.9	3.8	0.2	6.6	0.0	0.4	195.3	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	8.1	12.2	13.3	3.6	12.1	1.0	5.6	0.0	1.9	10.7	0.0	0.0
LnGrp Delay(d),s/veh	45.5	28.8	31.9	55.9	29.0	16.5	30.0	0.0	18.9	220.8	0.0	0.0
LnGrp LOS	D	C	C	E	C	B	C		B	F		
Approach Vol, veh/h	2132			1489			406			200		
Approach Delay, s/veh	30.9			30.9			26.4			220.8		
Approach LOS	C			C			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.0	10.0	33.0		22.0	10.0	33.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.0	6.0	29.0		18.0	6.0	29.0				
Max Q Clear Time (g_c+I1), s		19.8	7.0	26.6		20.0	6.9	24.9				
Green Ext Time (p_c), s		0.0	0.0	1.9		0.0	0.0	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay	39.5											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
 18: 211th Ave E & SR 410

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑	↖ ↑↑	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Volume (veh/h)	55	1365	170	235	975	55	235	10	230	60	10	30
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	1863	1863	1900	1863	1863	1863	1881	1881	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	1437	179	247	1026	58	247	11	242	63	11	32
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	0	0	0
Cap, veh/h	187	1915	238	291	1688	755	403	16	359	214	100	291
Arrive On Green	0.21	0.84	0.84	0.22	0.63	0.63	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1774	4582	570	1774	3539	1583	1371	70	1540	1144	430	1250
Grp Volume(v), veh/h	58	1063	553	247	1026	58	247	0	253	63	0	43
Grp Sat Flow(s),veh/h/ln	1774	1695	1762	1774	1770	1583	1371	0	1610	1144	0	1679
Q Serve(g_s), s	1.8	9.0	9.0	8.7	11.2	0.9	11.2	0.0	9.3	3.4	0.0	1.3
Cycle Q Clear(g_c), s	1.8	9.0	9.0	8.7	11.2	0.9	12.5	0.0	9.3	12.7	0.0	1.3
Prop In Lane	1.00		0.32	1.00		1.00	1.00		0.96	1.00		0.74
Lane Grp Cap(c), veh/h	187	1417	737	291	1688	755	403	0	375	214	0	392
V/C Ratio(X)	0.31	0.75	0.75	0.85	0.61	0.08	0.61	0.00	0.67	0.29	0.00	0.11
Avail Cap(c_a), veh/h	187	1417	737	328	1688	755	421	0	396	229	0	413
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.45	0.45	0.52	0.52	0.52	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	3.8	3.8	24.6	8.3	6.4	24.6	0.0	22.7	28.5	0.0	19.6
Incr Delay (d2), s/veh	0.4	1.7	3.2	9.7	0.9	0.1	2.5	0.0	4.2	0.8	0.0	0.1
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	0.9	4.0	4.5	5.0	5.5	0.4	4.5	0.0	4.6	1.1	0.0	0.6
LnGrp Delay(d),s/veh	24.1	5.5	7.0	34.3	9.1	6.5	27.0	0.0	26.9	29.2	0.0	19.7
LnGrp LOS	C	A	A	C	A	A	C		C	C		B
Approach Vol, veh/h	1674			1331			500			106		
Approach Delay, s/veh	6.7			13.7			26.9			25.4		
Approach LOS	A			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.2	14.7	31.2		19.2	10.8	35.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		16.0	12.0	25.0		16.0	6.0	31.0				
Max Q Clear Time (g_c+I1), s		14.5	10.7	11.0		14.7	3.8	13.2				
Green Ext Time (p_c), s		0.5	0.1	6.8		0.4	1.6	4.9				
Intersection Summary												
HCM 2010 Ctrl Delay	12.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
 19: 214th Ave E & SR 410

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑		↔↔	↑↑	
Volume (veh/h)	300	1055	345	280	1075	85	275	235	210	210	540	205
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	1863	1863	1863	1881	1881	1881	1881	1881	1900	1891	1891	1910
Adj Flow Rate, veh/h	316	1111	363	295	1132	89	289	247	221	221	568	216
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	534	1529	684	348	1347	603	354	481	414	282	619	235
Arrive On Green	0.31	0.86	0.86	0.10	0.38	0.38	0.10	0.26	0.26	0.08	0.24	0.24
Sat Flow, veh/h	3442	3539	1583	3476	3574	1599	3476	1823	1568	3493	2549	967
Grp Volume(v), veh/h	316	1111	363	295	1132	89	289	242	226	221	400	384
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1738	1787	1599	1738	1787	1604	1747	1796	1720
Q Serve(g_s), s	10.1	14.9	5.3	10.9	37.5	3.7	10.6	15.0	15.7	8.1	28.2	28.3
Cycle Q Clear(g_c), s	10.1	14.9	5.3	10.9	37.5	3.7	10.6	15.0	15.7	8.1	28.2	28.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.56
Lane Grp Cap(c), veh/h	534	1529	684	348	1347	603	354	472	424	282	436	418
V/C Ratio(X)	0.59	0.73	0.53	0.85	0.84	0.15	0.82	0.51	0.53	0.78	0.92	0.92
Avail Cap(c_a), veh/h	534	1529	684	374	1347	603	428	472	424	430	470	450
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)	0.55	0.55	0.55	0.77	0.77	0.77	0.59	0.59	0.59	0.72	0.72	0.72
Uniform Delay (d), s/veh	41.4	6.0	2.8	57.5	36.9	15.9	57.2	40.7	41.0	58.6	47.9	48.0
Incr Delay (d2), s/veh	1.0	1.7	1.6	12.6	5.1	0.4	6.1	0.6	0.8	3.8	17.1	18.1
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	1.8	7.1	2.4	5.8	19.5	1.7	5.4	7.5	7.1	4.0	16.1	15.6
LnGrp Delay(d),s/veh	42.3	7.7	4.4	70.2	42.0	16.3	63.3	41.3	41.7	62.4	65.0	66.1
LnGrp LOS	D	A	A	E	D	B	E	D	D	E	E	E
Approach Vol, veh/h		1790			1516			757			1005	
Approach Delay, s/veh		13.2			46.0			49.8			64.8	
Approach LOS		B			D			D			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	14.5	38.3	17.0	60.2	17.2	35.6	24.2	53.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	34.0	14.0	50.0	16.0	34.0	15.0	49.0				
Max Q Clear Time (g_c+10), s	11.0	17.7	12.9	16.9	12.6	30.3	12.1	39.5				
Green Ext Time (p_c), s	0.4	3.0	0.2	10.7	0.7	1.3	2.0	4.1				
Intersection Summary												
HCM 2010 Ctrl Delay			38.7									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 20: 234th Ave E & SR 410

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	860	405	110	850	60	100	25	10	60	70	55
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	1863	1863	1863	1863	1863	1900	1827	1827	1900	1900	1900	1900
Adj Flow Rate, veh/h	37	905	426	116	895	63	105	26	11	63	74	58
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	0	0	0
Cap, veh/h	364	1958	876	300	1855	131	177	124	52	214	117	92
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.10	0.10	0.10	0.12	0.12	0.12
Sat Flow, veh/h	584	3539	1583	410	3355	236	1740	1220	516	1810	989	775
Grp Volume(v), veh/h	37	905	426	116	472	486	105	0	37	63	0	132
Grp Sat Flow(s),veh/h/ln	584	1770	1583	410	1770	1821	1740	0	1736	1810	0	1763
Q Serve(g_s), s	2.2	8.1	8.7	12.5	8.6	8.6	3.1	0.0	1.0	1.7	0.0	3.8
Cycle Q Clear(g_c), s	10.8	8.1	8.7	20.7	8.6	8.6	3.1	0.0	1.0	1.7	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.30	1.00		0.44
Lane Grp Cap(c), veh/h	364	1958	876	300	979	1007	177	0	176	214	0	209
V/C Ratio(X)	0.10	0.46	0.49	0.39	0.48	0.48	0.59	0.00	0.21	0.29	0.00	0.63
Avail Cap(c_a), veh/h	383	2075	928	313	1037	1067	526	0	525	547	0	533
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	7.1	7.2	13.3	7.2	7.2	22.7	0.0	21.8	21.3	0.0	22.2
Incr Delay (d2), s/veh	0.1	0.2	0.4	0.8	0.4	0.4	3.2	0.0	0.6	0.8	0.0	3.1
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	0.4	3.9	3.9	1.5	4.2	4.3	1.6	0.0	0.5	0.9	0.0	2.0
LnGrp Delay(d),s/veh	10.6	7.3	7.6	14.1	7.6	7.6	25.9	0.0	22.4	22.0	0.0	25.4
LnGrp LOS	B	A	A	B	A	A	C		C	C		C
Approach Vol, veh/h		1368			1074			142			195	
Approach Delay, s/veh		7.5			8.3			25.0			24.3	
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		9.4		33.3		10.3		33.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		16.0		31.0		16.0		31.0				
Max Q Clear Time (g_c+I1), s		5.1		12.8		5.8		22.7				
Green Ext Time (p_c), s		0.3		12.2		0.5		6.6				
Intersection Summary												
HCM 2010 Ctrl Delay				9.9								
HCM 2010 LOS				A								

Intersection

Int Delay, s/veh 2.7

Movement	SBL	SBR	SEL	SET	NWT	NWR
Vol, veh/h	50	95	90	650	280	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	100	95	684	295	63

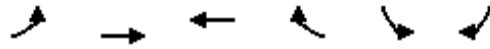
Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1200	326	358 0
Stage 1	326	-	- -
Stage 2	874	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	204	715	1201 -
Stage 1	731	-	- -
Stage 2	408	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	188	715	1201 -
Mov Cap-2 Maneuver	188	-	- -
Stage 1	731	-	- -
Stage 2	376	-	- -

Approach	SB	SE	NW
HCM Control Delay, s	18	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	1201	-	188	715
HCM Lane V/C Ratio	-	-	0.079	-	0.28	0.14
HCM Control Delay (s)	-	-	8.3	-	31.4	10.9
HCM Lane LOS	-	-	A	-	D	B
HCM 95th %tile Q(veh)	-	-	0.3	-	1.1	0.5

HCM 2010 Signalized Intersection Summary
 22: Rhodes Lake Rd & Angeline Rd

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↰	↰		↰	↰		
Volume (veh/h)	80	1005	445	85	110	50		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	84	1058	468	89	116	53		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	132	1273	1159	220	181	162		
Arrive On Green	0.76	0.76	0.76	0.76	0.10	0.10		
Sat Flow, veh/h	87	1671	1522	289	1774	1583		
Grp Volume(v), veh/h	1142	0	0	557	116	53		
Grp Sat Flow(s),veh/h/ln	1758	0	0	1812	1774	1583		
Q Serve(g_s), s	10.8	0.0	0.0	6.2	3.7	1.8		
Cycle Q Clear(g_c), s	24.4	0.0	0.0	6.2	3.7	1.8		
Prop In Lane	0.07			0.16	1.00	1.00		
Lane Grp Cap(c), veh/h	1405	0	0	1380	181	162		
V/C Ratio(X)	0.81	0.00	0.00	0.40	0.64	0.33		
Avail Cap(c_a), veh/h	1732	0	0	1726	483	431		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	4.4	0.0	0.0	2.4	25.3	24.5		
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.2	3.7	1.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	12.4	0.0	0.0	3.0	2.0	0.8		
LnGrp Delay(d),s/veh	6.9	0.0	0.0	2.6	29.1	25.7		
LnGrp LOS	A			A	C	C		
Approach Vol, veh/h		1142	557		169			
Approach Delay, s/veh		6.9	2.6		28.0			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				48.8		10.0		48.8
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				56.0		16.0		56.0
Max Q Clear Time (g_c+I1), s				26.4		5.7		8.2
Green Ext Time (p_c), s				18.3		0.3		24.0
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
 23: Rhodes Lake Rd & 192nd Ave

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↔	←		↔	↔		
Volume (veh/h)	435	135	80	80	120	280		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	458	142	84	84	126	295		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	685	169	502	502	423	378		
Arrive On Green	0.59	0.59	0.59	0.59	0.24	0.24		
Sat Flow, veh/h	931	289	856	856	1774	1583		
Grp Volume(v), veh/h	600	0	0	168	126	295		
Grp Sat Flow(s),veh/h/ln	1220	0	0	1712	1774	1583		
Q Serve(g_s), s	17.4	0.0	0.0	2.1	2.7	8.0		
Cycle Q Clear(g_c), s	19.5	0.0	0.0	2.1	2.7	8.0		
Prop In Lane	0.76			0.50	1.00	1.00		
Lane Grp Cap(c), veh/h	854	0	0	1003	423	378		
V/C Ratio(X)	0.70	0.00	0.00	0.17	0.30	0.78		
Avail Cap(c_a), veh/h	1209	0	0	1462	700	624		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.8	0.0	0.0	4.3	14.2	16.3		
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.1	0.4	3.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.4	0.0	0.0	1.0	1.3	3.8		
LnGrp Delay(d),s/veh	9.9	0.0	0.0	4.4	14.6	19.8		
LnGrp LOS	A			A	B	B		
Approach Vol, veh/h		600	168		421			
Approach Delay, s/veh		9.9	4.4		18.3			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.8		14.9		30.8
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				39.0		18.0		39.0
Max Q Clear Time (g_c+I1), s				21.5		10.0		4.1
Green Ext Time (p_c), s				5.3		0.9		6.6
Intersection Summary								
HCM 2010 Ctrl Delay			12.1					
HCM 2010 LOS			B					

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	1	5	1	1	10	5	280	5	25	470	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	1	5	1	1	11	5	295	5	26	495	42





















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	882	879	516	880	897	297	537	0	0	300	0	0
Stage 1	568	568	-	308	308	-	-	-	-	-	-	-
Stage 2	314	311	-	572	589	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	267	286	559	268	279	742	1031	-	-	1261	-	-
Stage 1	508	506	-	702	660	-	-	-	-	-	-	-
Stage 2	697	658	-	505	495	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	255	276	559	257	269	742	1031	-	-	1261	-	-
Mov Cap-2 Maneuver	255	276	-	257	269	-	-	-	-	-	-	-
Stage 1	505	491	-	698	656	-	-	-	-	-	-	-
Stage 2	682	654	-	484	480	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	11.5	0.1	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1031	-	-	342	569	1261	-	-
HCM Lane V/C Ratio	0.005	-	-	0.034	0.022	0.021	-	-
HCM Control Delay (s)	8.5	0	-	15.9	11.5	7.9	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

HCM 2010 Signalized Intersection Summary
 25: 200th Ave Ct E & 104th St

Projected 2035 With Improvements
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	5	45	1	1	5	30	315	5	10	915	140
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	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	111	5	47	1	1	5	32	332	5	11	963	147
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	8	169	112	35	111	365	1271	19	830	1294	1100
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1558	70	1583	94	323	1043	506	1830	28	1039	1863	1583
Grp Volume(v), veh/h	116	0	47	7	0	0	32	0	337	11	963	147
Grp Sat Flow(s),veh/h/ln	1629	0	1583	1460	0	0	506	0	1858	1039	1863	1583
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	0.0	1.7	0.0	2.7	0.2	13.2	1.3
Cycle Q Clear(g_c), s	2.5	0.0	1.1	2.5	0.0	0.0	14.9	0.0	2.7	2.9	13.2	1.3
Prop In Lane	0.96		1.00	0.14		0.71	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	349	0	169	258	0	0	365	0	1290	830	1294	1100
V/C Ratio(X)	0.33	0.00	0.28	0.03	0.00	0.00	0.09	0.00	0.26	0.01	0.74	0.13
Avail Cap(c_a), veh/h	761	0	629	716	0	0	466	0	1661	1037	1665	1416
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	16.6	16.1	0.0	0.0	8.6	0.0	2.3	2.8	3.9	2.1
Incr Delay (d2), s/veh	0.6	0.0	0.9	0.0	0.0	0.0	0.1	0.0	0.1	0.0	1.4	0.1
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	1.3	0.0	0.5	0.1	0.0	0.0	0.3	0.0	1.3	0.0	6.9	0.5
LnGrp Delay(d),s/veh	17.7	0.0	17.4	16.2	0.0	0.0	8.7	0.0	2.4	2.8	5.2	2.1
LnGrp LOS	B		B	B			A		A	A	A	A
Approach Vol, veh/h		163			7			369			1121	
Approach Delay, s/veh		17.6			16.2			2.9			4.8	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		8.3		32.0		8.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		36.0		16.0		36.0		16.0				
Max Q Clear Time (g_c+I1), s		16.9		4.5		15.2		4.5				
Green Ext Time (p_c), s		11.1		0.5		11.7		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			5.7									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
 26: 214th Ave E & S Prairie Road

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	
Volume (veh/h)	45	320	445	5	330	185	215	360	5	305	730	50
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	1900	1881	1881	1900	1881	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	47	337	468	5	347	195	226	379	5	321	768	0
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	96	501	535	53	378	210	202	444	6	577	828	0
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.06	0.24	0.24	0.26	0.44	0.00
Sat Flow, veh/h	117	1496	1599	4	1130	628	1792	1852	24	1792	1881	0
Grp Volume(v), veh/h	384	0	468	547	0	0	226	0	384	321	768	0
Grp Sat Flow(s),veh/h/ln	1613	0	1599	1763	0	0	1792	0	1877	1792	1881	0
Q Serve(g_s), s	0.0	0.0	19.6	3.8	0.0	0.0	4.0	0.0	13.9	5.8	27.4	0.0
Cycle Q Clear(g_c), s	13.8	0.0	19.6	21.2	0.0	0.0	4.0	0.0	13.9	5.8	27.4	0.0
Prop In Lane	0.12		1.00	0.01		0.36	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	597	0	535	641	0	0	202	0	450	577	828	0
V/C Ratio(X)	0.64	0.00	0.87	0.85	0.00	0.00	1.12	0.00	0.85	0.56	0.93	0.00
Avail Cap(c_a), veh/h	602	0	540	646	0	0	202	0	713	577	926	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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.9	0.0	22.2	22.8	0.0	0.0	29.0	0.0	25.8	20.7	18.8	0.0
Incr Delay (d2), s/veh	2.3	0.0	14.7	10.7	0.0	0.0	98.5	0.0	5.9	1.2	14.2	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	16.8	0.0	10.8	12.2	0.0	0.0	7.5	0.0	7.9	5.4	17.3	0.0
LnGrp Delay(d),s/veh	22.3	0.0	37.0	33.5	0.0	0.0	127.6	0.0	31.7	21.9	33.0	0.0
LnGrp LOS	C		D	C			F		C	C	C	
Approach Vol, veh/h		852			547			610			1089	
Approach Delay, s/veh		30.3			33.5			67.2			29.7	
Approach LOS		C			C			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.2	21.0		27.8	8.0	35.3		27.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	12.0	27.0		24.0	4.0	35.0		24.0				
Max Q Clear Time (g_c+1), s	17.8	15.9		21.6	6.0	29.4		23.2				
Green Ext Time (p_c), s	2.0	1.2		1.6	0.0	1.8		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			37.9									
HCM 2010 LOS			D									

Intersection

Int Delay, s/veh 11.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	75	10	5	20	5	25	5	475	15	20	825	175
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	0	0	0	1	1	1	1	1	1
Mvmt Flow	79	11	5	21	5	26	5	500	16	21	868	184




















Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1537	1529	961	1529	1613	508	1053	0	0	516	0	0
Stage 1	1003	1003	-	518	518	-	-	-	-	-	-	-
Stage 2	534	526	-	1011	1095	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.5	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	95	117	311	97	105	569	665	-	-	1055	-	-
Stage 1	292	320	-	544	536	-	-	-	-	-	-	-
Stage 2	530	529	-	291	292	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	85	114	311	87	102	569	665	-	-	1055	-	-
Mov Cap-2 Maneuver	85	114	-	87	102	-	-	-	-	-	-	-
Stage 1	290	314	-	540	532	-	-	-	-	-	-	-
Stage 2	497	525	-	271	286	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	190.3	39.7	0.1	0.2
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	665	-	-	91	155	1055	-
HCM Lane V/C Ratio	0.008	-	-	1.041	0.34	0.02	-
HCM Control Delay (s)	10.5	-	-	190.3	39.7	8.5	-
HCM Lane LOS	B	-	-	F	E	A	-
HCM 95th %tile Q(veh)	0	-	-	6.2	1.4	0.1	-

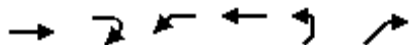
HCM 2010 Signalized Intersection Summary
28: 214th Ave E & 120th St E

Projected 2035 With Improvements
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	310	245	125	25	95	55	85	210	15	90	420	430
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	1810	1810	1900	1827	1827	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	326	258	132	26	100	58	89	221	16	95	442	453
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	4	4	4	2	2	2	2	2	2
Cap, veh/h	514	440	225	327	423	245	148	329	20	170	652	747
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1189	1130	578	971	1086	630	144	698	43	205	1383	1583
Grp Volume(v), veh/h	326	0	390	26	0	158	326	0	0	537	0	453
Grp Sat Flow(s),veh/h/ln	1189	0	1708	971	0	1716	885	0	0	1588	0	1583
Q Serve(g_s), s	14.6	0.0	10.4	1.3	0.0	3.6	5.9	0.0	0.0	0.0	0.0	12.2
Cycle Q Clear(g_c), s	18.2	0.0	10.4	11.7	0.0	3.6	21.1	0.0	0.0	15.2	0.0	12.2
Prop In Lane	1.00		0.34	1.00		0.37	0.27		0.05	0.18		1.00
Lane Grp Cap(c), veh/h	514	0	664	327	0	668	497	0	0	823	0	747
V/C Ratio(X)	0.63	0.00	0.59	0.08	0.00	0.24	0.66	0.00	0.00	0.65	0.00	0.61
Avail Cap(c_a), veh/h	589	0	772	388	0	775	578	0	0	935	0	853
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	13.9	18.5	0.0	11.8	12.4	0.0	0.0	11.6	0.0	11.2
Incr Delay (d2), s/veh	1.8	0.0	0.9	0.1	0.0	0.2	2.2	0.0	0.0	1.4	0.0	1.0
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	5.1	0.0	5.0	0.3	0.0	1.7	4.9	0.0	0.0	6.9	0.0	5.5
LnGrp Delay(d),s/veh	19.7	0.0	14.8	18.6	0.0	12.0	14.5	0.0	0.0	13.0	0.0	12.2
LnGrp LOS	B		B	B		B	B			B		B
Approach Vol, veh/h		716			184			326			990	
Approach Delay, s/veh		17.0			12.9			14.5			12.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.1		26.4		31.1		26.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		31.0		26.0		31.0		26.0				
Max Q Clear Time (g_c+I1), s		23.1		20.2		17.2		13.7				
Green Ext Time (p_c), s		4.1		2.2		5.7		3.4				
Intersection Summary												
HCM 2010 Ctrl Delay			14.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 29: Angeline Rd & Sumner Buckley Hwy

Projected 2035 With Improvements
 PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NEL	NER		
Lane Configurations	↑	↗	↖	↑	↘	↙		
Volume (veh/h)	1155	170	125	425	110	110		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1844	1844	1845	1900		
Adj Flow Rate, veh/h	1216	179	132	447	116	116		
Adj No. of Lanes	1	1	1	1	0	0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	1	1	2	2	0	0		
Cap, veh/h	1433	1218	197	1405	130	130		
Arrive On Green	0.76	0.76	0.76	0.76	0.16	0.16		
Sat Flow, veh/h	1881	1599	382	1844	825	825		
Grp Volume(v), veh/h	1216	179	132	447	233	0		
Grp Sat Flow(s),veh/h/ln	1881	1599	382	1844	1658	0		
Q Serve(g_s), s	43.4	3.0	32.6	7.6	13.7	0.0		
Cycle Q Clear(g_c), s	43.4	3.0	76.0	7.6	13.7	0.0		
Prop In Lane		1.00	1.00		0.50	0.50		
Lane Grp Cap(c), veh/h	1433	1218	197	1405	262	0		
V/C Ratio(X)	0.85	0.15	0.67	0.32	0.89	0.00		
Avail Cap(c_a), veh/h	1433	1218	197	1405	266	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	8.0	3.2	34.5	3.7	41.1	0.0		
Incr Delay (d2), s/veh	5.0	0.1	8.5	0.1	28.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	23.9	1.3	4.1	3.9	8.3	0.0		
LnGrp Delay(d),s/veh	13.0	3.2	43.1	3.9	69.5	0.0		
LnGrp LOS	B	A	D	A	E			
Approach Vol, veh/h	1395			579	233			
Approach Delay, s/veh	11.7			12.8	69.5			
Approach LOS	B			B	E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.8		80.0				80.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		76.0				76.0
Max Q Clear Time (g_c+I1), s		15.7		45.4				78.0
Green Ext Time (p_c), s		0.0		17.8				0.0
Intersection Summary								
HCM 2010 Ctrl Delay			18.1					
HCM 2010 LOS			B					
Notes								
User approved volume balancing among the lanes for turning movement.								

Intersection

Int Delay, s/veh 2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	230	75	35	185	60	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	242	79	37	195	63	32

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	321
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1239
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1239
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	547	-	-	1239	-
HCM Lane V/C Ratio	0.173	-	-	0.03	-
HCM Control Delay (s)	13	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	95	630	460	5	10	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	663	484	5	11	111

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	489	0	1350
Stage 1	-	-	487
Stage 2	-	-	863
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1074	-	166
Stage 1	-	-	618
Stage 2	-	-	413
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1074	-	142
Mov Cap-2 Maneuver	-	-	142
Stage 1	-	-	618
Stage 2	-	-	352

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	458
HCM Lane V/C Ratio	0.093	-	-	-	0.264
HCM Control Delay (s)	8.7	0	-	-	15.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.1